THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Rocky Mountain Oil & Gas Association, Rainbow Hotel, Great Falls, Mont., Dec. 12, 13.

Tennessee Oil Men's Association, Farragut Hotel, Knoxville, Tenn., Dec. 15, 16.

Minnesota Division, Northwest Petroleum Association, Radisson Hotel, Minneapolis, Jan. 14, 15.

North Dakota Division, Northwest Petroleum Association, Dacotah Hotel, Grand Forks, N. D., Jan. 29, 30.

Ohio Petroleum Marketers Association, Neil House, Columbus, O., Feb. 24, 25, 26.

American Association of Petroleum Geologists, Gunter Hotel, San Antonio, Texas, March 19, 20 and 21, 1931.

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EARLE M. CRAIG, one of the younger generation of Western Pennsylvania refiners, recently was elected president of the Freedom Oil Works Co., Freedom, Pa. He succeeds his father, the late Percy L. Craig, who headed the company from 1912 until his death last December.

The new Freedom president has devoted most of his active business life to the company he now heads. He worked at the refinery during school vacations and became a full time employe when he was graduated from Sheffield Scientific School, Yale University, in 1916. He was made assistant to the president in 1919 and a vice president of the company in 1924.

Mr. Craig is a trustee of the National Petroleum Association and of the American University at Cairo. He is director of a number of companies including the Craig Oil Co. of Toledo and the Chartiers Oil Co. of Pittsburgh.

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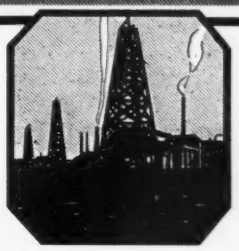

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Vol. 22 **CLEVELAND, December 3** **No. 49**

Railroad Executives Seek to Divorce Pipelines from Oil Companies

By A. E. Heiss

N. P. N. WASHINGTON REPRESENTATIVE

WASHINGTON, Dec. 1 ALARMED by the encroachment of other forms of transportation on their revenues, railroad executives have declared war on the oil industry's pipelines.

They have prepared a bill to introduce in congress forbidding the pipelines to carry oil in which they have any direct or indirect interest; that is, presumably, oil produced, or refined, by any company in any way connected with the pipeline company.

This would hit virtually all the big oil companies of the country, which have their own pipeline systems, of greater or less magnitude, built primarily to carry their own production to their refineries.

The campaign of the railroad executives does not concern itself with the pipelines exclusively. They believe their roads are confronted with their most serious emergency since the transportation act was passed in 1920. Their proposed relief legislation, in addition, would put coastal ship lines under the jurisdiction of the Interstate Commerce Commission; give the roads permission to operate their own ships on the Great Lakes; regulate the interstate freight trucking and passenger motor lines.

The investment of the oil industry in pipelines, from which the railroad executives would divorce the industry, amounted in 1929 to $741,010,196 in lines and immediate accessories thereto, and $104,445,372 in other property.

At present the railroads are forbidden by law "to transport . . . any article of commodity, other than timber and the manufactured products thereof, manufactured, mined or produced by it, or under its authority, or which it may own in whole or in part, or in which it may have any interest, direct or indirect, except such articles or commodities as may be necessary and intended for its use in the conduct of its business as a common carrier."

The executives through an organization known as the Association of Railway Executives, in New York, Nov. 20, adopted a "declaration of policy deemed necessary to the continuance of adequate transportation service to the public."

The last item in the list of things about which the executive declared their intention to seek legislation, reads:

"That pipeline common carriers be subjected to the same restrictions as to the transportation of commodities in which they are interested, directly or indirectly, as the railroads are now."

That the executives had decided to procure legislation to divorce the pipelines from the producing and refining units to which they were attached did not become known until more than a week after they had acted. Then the fact was made public through a discussion of what the executives had done by Charles C. Paulding, vice president of the New York Cen-

THE two reports which the oil industry is urged to study, in the message on the front cover of this issue, are to be found in Nov. 12th and 19th issues of NATIONAL PETROLEUM NEWS.

On pages 22 and 23 in this issue also are charts and tables which give the latest information on the industry's progress toward stabilization, both as regards gasoline manufacture and stocks and crude production.

tral in charge of its departments of law and public relations.

There is no doubt about what the railroad heads want. Mr. Paulding told NATIONAL PETROLEUM NEWS they would seek a revision of the commodities clause of the interstate commerce law which would make it applicable to pipelines, not merely where the pipeline owns the producing, refining or marketing organization; but also to pipelines owned by producing, refining or marketing organizations.

AS THE commodities clause has been applied by the U. S. Supreme Court its prohibition runs only against commodities manufactured, mined or produced by plants owned by railroads. That is the way it has been enforced against the railroads.

The clause has not been invoked, until recently, against the hauling of commodities of the proprietary interest where the railroad is owned by the industrial concern. It the last 22 years it has been in effect it has never been invoked, until recently, against, for instance, the hauling of goods produced by the United States Steel Corp. by railroads owned by the steel corporation.

A few months ago the U. S. attorney general, at the instigation of the Interstate Commerce Commission, filed suit against the Elgin, Joliet & Eastern, a very important terminal railroad in the Chicago area, to prevent it hauling commodities manufactured, mined or produced by the steel corporation or its subsidiaries. The Elgin, Joliet & Eastern is owned by the Illinois Steel Co., a subsidiary of the steel corporation.

The suit was to prevent the hauling of iron and steel articles manufactured in steel corporation plants, coal mined in steel corporation mines and coke produced in steel corporation ovens.

Inasmuch as the steel corporation, either directly or by its subsidiaries, carries on many manufacturing and mining processes, a court order forbidding the Elgin, Joliet & Eastern to haul such products would be disastrous until some arrangements could be made for divesting ownership of that railroad from the steel corporation. The suit has not yet come up for trial.

The object of the proceeding is to put the commodities clause on a turn-table and head it in the opposite direction to that it has traveled for the last 22 years. The theory is that the Elgin, Joliet & Eastern has an interest, direct or indirect, in the goods produced by the steel corporation and its subsidiaries even if it has not a dollar of its own invested in any of the companies that produced the traffic.

In discussions with NATIONAL PETROLEUM NEWS, Mr. Paulding, chief law officer of the New York Central, said he knew about the Elgin, Joliet & Eastern suit and the legal proposition it contained.

As to how it came about that the pipeline part of the program was not revealed at the time the railroad executives acted, there is no explanation. The fact is the first announcement made by the executives did not contain it. The announcement did not purport to be the program in full but did purport to be an abstract of it. However, the only thing in that first announcement about pipelines, was the statement that pipelines were among the things that had deprived the railroads of traffic and necessarily revenue and that the latest development, piping of natural gas to large centers of population, would still further reduce the coal traffic of the railroads.

REFERENCE to the initial announcement by the executives caused doubt to be thrown upon the accuracy of the paraphrase of the program made public by Mr. Paulding but inquiry at the office of Alfred P. Thom, general counsel of the Association of Railway Executives, confirmed that the executives had decided that, in the interest of the railroads of which they were the heads, the oil industry's pipelines should be divorced from it.

Traffic men familiar with the law and facts pertaining to transportation doubt whether such a divorce would be of any help to the railroads. When the commodities clause was clapped upon the anthracite coal carrying roads which, under charters granted to them by Pennsylvania also mined and marketed hard coal, the Supreme Court held its decree of separation had been complied with when these roads organized coal mining and marketing companies to which they transferred the coal property in exchange for the stock of the coal mining companies. Later, in one form or another this stock was transferred to the holders of the hard-coal railroad company stock. The hard coal dissolution was much like the dissolution of the Standard Oil combination except that not so many new companies were created.

IT IS pointed out that, if and when pipelines are made subject to the commodities clause, they will probably also be made subject to the provision of the law relating to railroads whereby the latter are compelled to make physical connections with any tracks that may be built to their rights of way.

The central thought in the minds of the railroad executives is that the pipelines, transporting only for their proprietary interests, with few exceptions, are not subjected to burdens, as common carriers, to which the railroads are and that, therefore, the pipelines can transport petroleum and its products at rates far below any a railroad could make and live.

Their thought is that, if the pipelines were made common carriers required to carry for every refinery that chose to build a tap line to the trunk line of a pipe company, the latter would be subjected to burdens making competition between the pipeline and the railroad more nearly equal in basic conditions.

However, many traffic men believe that such a separation as the railroad executives suggest would be a boomerange for the railroads. They suggest that, if the pipelines were subjected to all the burdens of common carriers, they would naturally seek business from producing, refining and marketing units not connected with the proprietary interest. In that way transportation by pipeline might be increased instead of diminished.

The Editors' Viewpoint

Backing Up the Industry's Voluntary Efforts

THIS year of 1930 will go into history as one in which the right of the state to supervise and even restrict the production of oil and gas in the interests of conservation has been affirmed, not once but several times.

As short a time as a year ago, an oil man who attempted to predict what would be said in court opinions coming at so early a date, would have been accorded less respect than is the usual due of prophets.

It is true what decisions have so far been handed down, in cases brought by individual oil companies questioning the right of the state to regulate their activities, have not yet been passed on by the United States Supreme Court. The rulings have been of various state courts.

However, it seems to us that the decisions of 1930 in this matter can be taken as a reflection of the point of view the public is coming to have in the matter. As has been said many times, laws are founded on public opinion and interpretations of laws are influenced by public opinion. Strong enough public opinion is going to find itself written into law either by legislative enactment or by court decree.

Public opinion towards the oil industry has been greatly stimulated, and even directed, since the Federal Oil Conservation Board was created, and perhaps this was one of the functions for which the board was created. Various public discussions of the oil situation under the auspices of the American Petroleum Institute and other bodies have served to educate the public. This awakening of public opinion has been reflected in editorial discussion in newspapers throughout the country, which in the main has been sympathetic to the oil companies in their efforts to work out relief, but which has also recognized a public interest in the matter.

It seems likely that the increasingly wide distribution of natural gas for domestic fuel will serve to stimulate the public's interest further in this direction.

Supervision and regulation of gas production has always been regarded as a state function. The principal oil producing states have had laws for years against unreasonable waste of gas, but the definition of "unreasonable" has been a subject of dispute. Some oil companies have maintained that, in new oil fields, where there was no market for the gas, the blowing of gas into the air along with the production of oil could not be termed unreasonable.

However, with more and more people using natural gas and wider markets being continually developed through the building of new long distance gas lines and the hooking up of existing systems, there is undoubtedly going to be the pressure of public opinion against waste of gas, whether by itself or along with the production of oil.

The production of oil and gas are closely related. The supervision and regulation of gas production in California was resorted to, in part at least, to provide a means for the state to keep a regulatory hand on oil production. At least it would seem that the increasing effort to conserve supplies of natural gas would be an influence towards state supervision of oil production to the end of avoiding surplus output.

The most hopeful sign in the entire matter is the fact that the court decisions which have been passed down this year sustaining and amplifying the power of the state to supervise oil production have served to make more clear a path on which the oil producing companies as a whole had already embarked.

In California, for example, over a year ago a gas conservation act was passed in the drawing up of which the oil companies had a large part. Attacks on the constitutionality of the statute were not then anticipated, but these developed on the part of minor oil interests, who sought to show they were deprived of their property and that the state's agents had no right to set arbitrary oil/gas ratios in various fields.

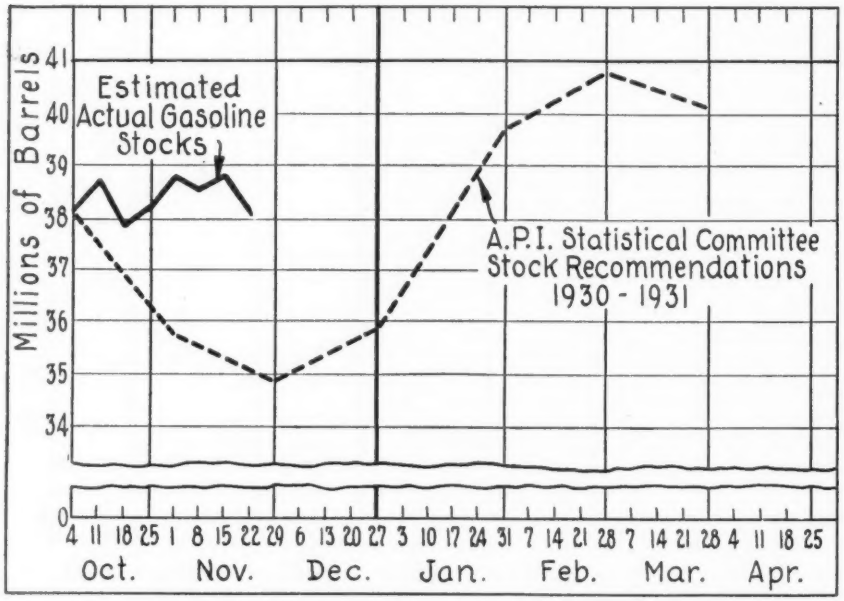
During this year that statute has been the basic of several suits, either challenging its authority or brought by the state seeking a court order to make it effective. Within the week a California court of appeals has upheld the constitutionality of the act and, further, has stated the surface owner gains absolute title to oil and gas only when reduced to possession.

An Oklahoma federal court a few months ago said: "It has been authoritatively decided that it is competent state legislation to prevent waste of gas and oil, both to protect producers from a common pool and to conserve the resources of the state."

In another case the Oklahoma supreme court ruled: "* * * it is within the police power of the state, in keeping with due process of law, to require the several surface owners to produce same (oil and gas) under reasonable regulations to the end that some of said owners may not take from the common source more than their equitable share."

Certainly, what court rulings have come to light this year having to do with the supervisory rights of the state over oil production have not been to the detriment to the attempts of the oil producing industry to itself hold crude output to market demand.

Oil Industry's Progress Toward Stability


Millions of Barrels
41
40
39
38
37
36
35
34
0
Estimated Actual Gasoline Stocks
A.P.I. Statistical Committee Stock Recommendations 1930 - 1931
4 11 18 25 1 8 15 22 29 6 13 20 27 3 10 17 24 31 7 14 21 28 7 14 21 28 4 11 18 25
Oct. Nov. Dec. Jan. Feb. Mar. Apr.

The above chart shows the present status of actual gasoline stocks at refineries in this country (solid line) as compared with the recommendations in the report of the A. P. I. committee for stocks for various periods (dotted line) to bring the industry out April 1 with total stocks of 40,000,000 barrels.

REAL headway, which promises well for 1931, is now being made through the oil producing and oil refining companies' individual efforts to hold their production of crude oil and their manufacture of gasoline to current market needs and avoid adding further to their surplus stocks.

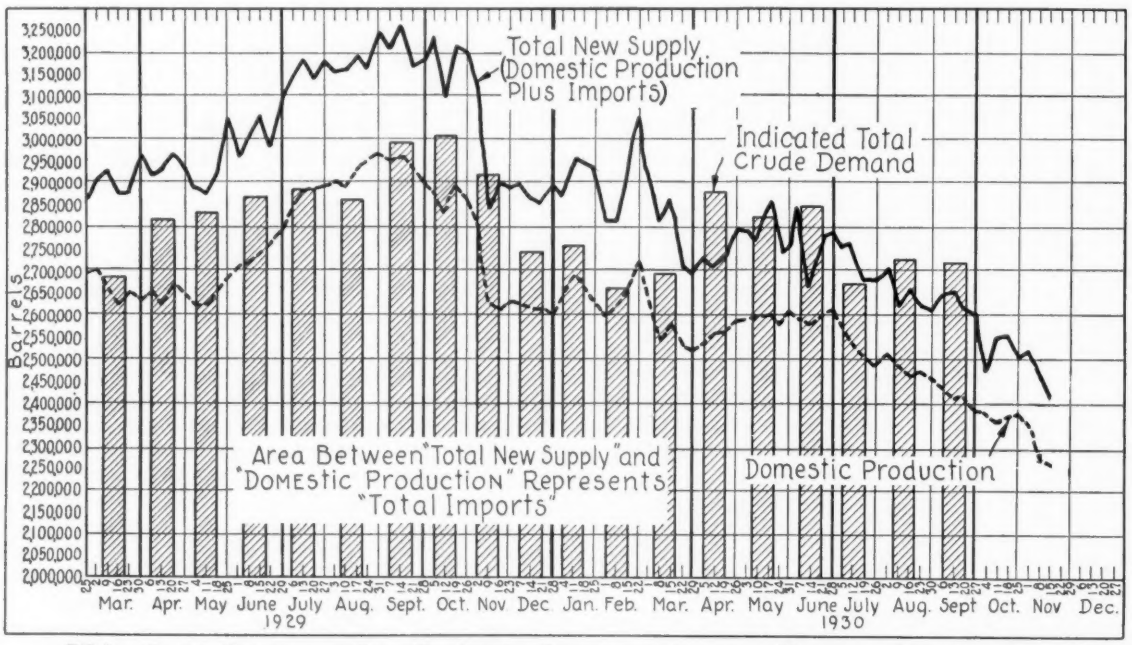
This headway to stabilization and the elimination of unsound practices that naturally accompany the marketing of surplus material is largely the cumulative effect of the work carried on the American Petroleum Institute and other organizations in giving oil men current data on the fundamental economics of supply and demand.

The charts and text on these two pages give the latest information on gasoline stocks at refineries in their relation to the recommendations of the institute statistical committee which look forward to total stocks of 40,000,000 barrels on April 1 next.

They also show crude oil production and imports, total supply, for the current week as compared with estimated demand.

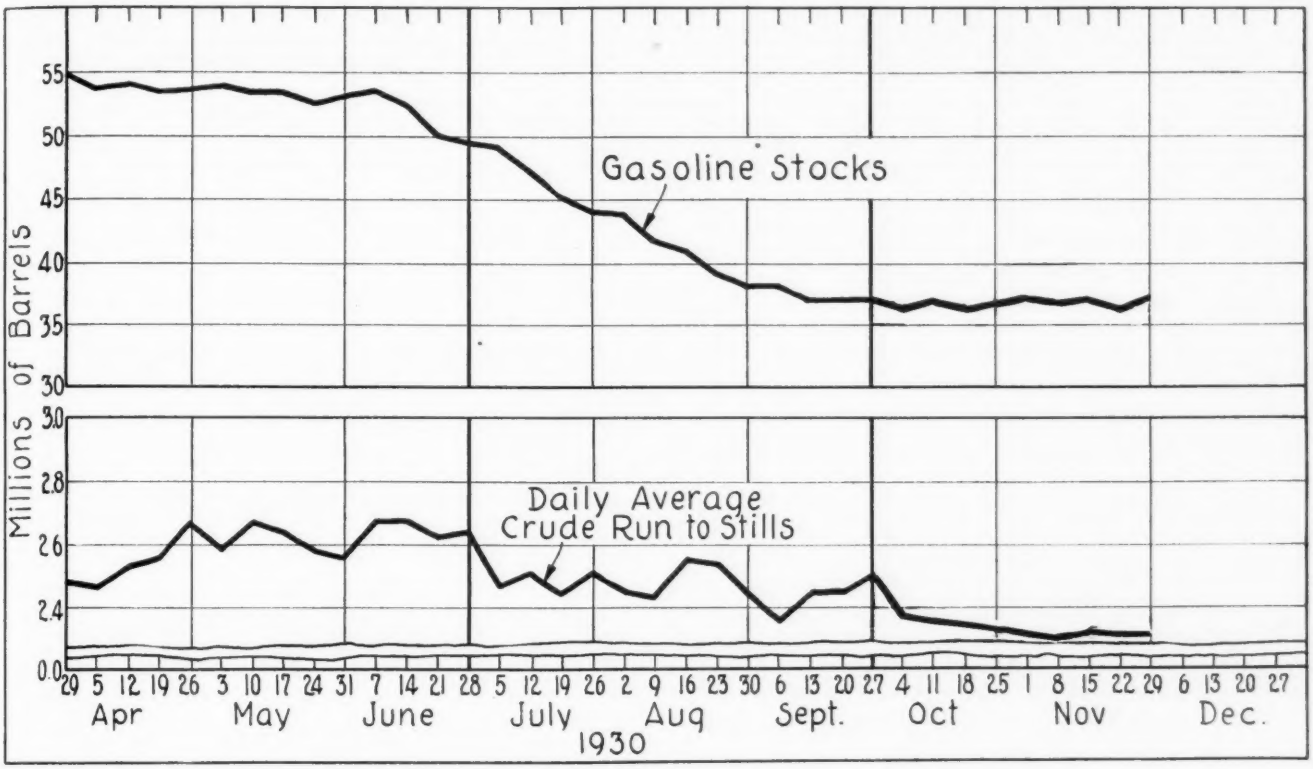
New supply of crude available in the last week of November was reduced 44,950 barrels daily average to 2,407,900 barrels per day. Domestic production was lower by 15,950 barrels and exports were down 29,000 barrels daily average.

Refinery demand for crude oil likewise dropped during the week. Crude runs at refiners reporting weekly to the institute were cut 44,500 barrels daily average to 2,246,300 barrels per day.



This chart shows crude oil supply from week according to the American Petroleum Institute reports (solid line) in relation to indicated crude oil demand as taken from the Bureau of Mines monthly reports (shaded columns).

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Cold Wave Reduces Gasoline Shipments

By Telegraph

NEW YORK, Dec. 2

COLD weather over a large part of the country the last week of November ate into the gasoline demand. As a result stocks of motor fuels at U. S. refineries increased 755,000 barrels according to reports gathered by the American Petroleum Institute.

Total gasoline stocks at reporting plants Nov. 28 were 37,287,000 barrels. On Nov. 1 the same group of plants reported stocks totaling 37,215,000 barrels. The increase during the month was only 72,000 barrels, the smallest figure in the history of the refining industry.

Only two groups were able to draw on gasoline stocks during the week. Texas refiners drew 101,000 barrels from storage when they reduced crude runs 49,100 barrels daily average. All the cut was in the Gulf Coastal region. Indiana-Illinois refiners drew 15,000 barrels from storage.

Largest additions to inventories were made by California, East Coast and Oklahoma-Kansas refiners. California added 372,000 barrels, the East Coast 220,000 barrels and Oklahoma-Kansas 217,000 barrels to gasoline reserves.

Fuel and gas oil stocks were reduced 386,000 barrels during the week to 138,868,000 barrels.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Gasoline		Gas & Fuel Oil	
		Nov. 29	Nov. 22	Nov. 29	Nov. 22	Nov. 29	Nov. 22	Nov. 29	Nov. 22
East Coast	100.0	453,100	429,400	74.0	70.1	5,563	5,343	11,182	11,566
Appalachian	93.8	74,300	71,300	56.1	53.8	778	766	1,025	1,029
Ind., Ill., Ky	97.5	260,600	257,600	68.4	67.6	4,255	4,270	3,978	3,914
Okla., Kans., Mo	89.4	250,900	258,100	60.9	62.6	2,325	2,108	4,583	4,603
Texas	91.9	478,300	527,400	64.3	70.9	6,292	6,393	11,017	10,730
La., Ark	98.3	146,700	148,100	56.0	56.5	1,295	1,253	2,261	2,138
Rocky Mountain	93.1	43,300	45,300	31.0	32.4	1,517	1,509	1,029	1,017
California	98.8	539,100	553,600	60.7	62.4	15,262	14,890	103,793	104,257
Total	95.7	2,246,300	2,290,800	62.9	64.1	37,287	36,532	138,868	139,254
Texas (Gulf Coast)	100.0	354,300	406,700	66.9	76.8	5,030	5,149	8,290	8,000
La. (Gulf Coast)	100.0	98,300	101,900	66.6	69.1	1,011	986	1,291	1,173

Taxed Gasoline Consumption Up 5.2 Per Cent in September

NEW YORK, Dec. 1

MOTORISTS used 3.4 per cent less gasoline in September than in August, or a daily average of 41,868,000 gallons in September, compared with daily average of 43,345,000 gallons in August, according to the American Petroleum Institute.

Gasoline consumption in 47 states in September, according to reports of wholesalers and dealers who report their gasoline sales under gasoline tax laws in the various states, totaled 1,256,025,000 gallons, a gain of 62,167,000 gallons, or 5.2 per cent over September, 1929.

Increases in other months this year over corresponding months of 1929 have been: August, 2.9 per cent; July, 5.6 per cent; June, 6.4 per cent; May, 4.5 per cent; April, 14.2 per cent; March, 7.1 per cent; February, 20.2 per cent; and January, 9.6 per cent, indicating an average increase of 8.4 per cent for the first nine months of this year, compared with an increase of 14 per cent last year.

For the nine months ended September this year, gasoline demand in 45 states totaled 8,337,186,000 gallons, a gain of 522,399,000 gallons, or 6.7 per cent, over the corresponding period of 1929.

In the accompanying table are the gasoline consumption figures for September, compared with August, and with September, 1929.

Gasoline Consumption by States, September, 1930

(Figures in thousands of gallons)

	Aug. 1930	Sept. 1930	Sept. 1929	% Change Over Sept., 1929	9 Months Ended Sept. 1930	9 Months Ended Sept. 1929	Per Cent Change
Alabama	15,717	14,675	15,765	— 6.91	131,203	133,607	— 1.80
Arizona	6,192	6,276	6,113	+ 2.67	57,099	52,835	+ 8.07
Arkansas	12,552	12,765	13,538	— 5.71	105,616	99,726	+ 5.91
Colorado	18,360	16,693	14,218	+17.41	132,646	120,386	+10.18
Connecticut	22,875	20,508	19,310	+ 6.20	168,316	151,501	+11.10
Delaware	4,466	3,361	3,049	+10.23	27,449	24,469	+12.18
Dist. of Columbia	7,155	6,946	6,322	+ 9.87	58,862	53,590	+ 9.84
Florida	16,599	16,348	15,552	+ 5.12	170,363	167,994	+ 1.41
Georgia	21,114	19,799	15,438	+28.25	168,947	163,122	+ 3.57
Idaho	7,223	6,790	6,139	+10.60	46,899	40,259	+16.49
Illinois	94,920	89,282	84,768	+ 5.33	.....	.....	.....
Indiana	43,825	42,647	40,545	+ 5.18	346,253	328,456	+ 5.42
Iowa	37,614	37,572	33,354	+12.65	297,353	250,032	+18.93
Kansas	36,573	36,039	34,204	+ 5.36	302,288	280,225	+ 7.87
Kentucky	16,588	15,624	14,990	+14.23	126,257	115,828	+ 9.00
Louisiana	15,960	15,919	16,225	— 1.89	136,671	130,271	+ 4.91
Maine	15,151	12,623	11,445	+10.29	81,823	72,659	+12.61
Maryland	16,986	16,635	15,469	+ 7.54	130,381	121,911	+ 6.95
Massachusetts	55,199	50,390	47,167	+ 6.83	404,536	377,529	+ 7.15
Michigan	79,736	73,776	75,252	— 1.96	601,857	595,893	+ 1.00
Minnesota	43,158	41,227	35,381	+16.52	305,075	270,102	+12.95
Mississippi	(a)12,574	(a)11,740	12,517	— 6.21	(a)105,116	106,077	— 0.91
Missouri	40,087	40,516	37,833	+ 7.09	327,196	292,078	+12.02
Montana	8,436	10,486	11,272	— 6.97	65,009	59,865	+ 8.59
Nebraska	21,530	21,222	18,142	+16.98	173,710	174,415	— 0.40
Nevada	1,976	1,889	1,878	+ 0.59	14,217	13,289	+ 6.98
New Hampshire	8,843	6,998	6,752	+ 3.64	49,898	44,587	+11.91
New Jersey	55,645	50,050	44,111	+13.46	410,498	376,260	+ 9.10
New Mexico	5,441	5,154	4,281	+20.39	40,903	33,452	+22.27
New York	157,629	142,343	128,398	+10.86	.....	.....	.....
North Carolina	20,469	22,806	24,091	— 5.33	183,781	189,514	— 3.02
North Dakota	17,399	14,290	14,150	+ 0.99	98,050	102,004	— 3.88
Ohio	97,693	81,084	94,845	—14.51	739,346	721,333	+ 2.50
Oklahoma	29,446	30,149	28,408	+ 6.13	246,355	235,511	+ 4.60
Oregon	17,737	16,779	15,983	+ 4.98	130,333	122,021	+ 6.81
Rhode Island	9,247	8,266	7,326	+12.83	66,168	58,742	+12.64
South Carolina	10,976	10,724	10,347	+ 3.64	88,545	87,703	+ 0.96
South Dakota	15,211	14,393	11,621	+23.85	108,243	95,376	+13.49
Tennessee	21,111	20,090	19,179	+ 4.75	161,080	143,997	+11.86
Texas	73,283	72,707	67,321	+ 8.00	603,876	571,143	+ 5.73
Utah	5,895	5,464	5,440	+ 0.44	46,578	42,531	+ 5.73
Vermont	6,355	5,334	4,962	+ 7.50	35,343	33,297	+ 6.14
Virginia	22,887	20,738	19,568	+ 5.98	169,710	154,561	+ 9.80
Washington	27,593	25,759	24,036	+ 7.17	208,097	191,026	+ 8.94
West Virginia	14,585	14,561	12,901	+12.87	104,673	94,225	+11.09
Wisconsin	49,359	42,898	40,875	+ 4.95	332,208	294,463	+12.82
Wyoming	4,328	3,690	3,377	+ 9.27	28,359	26,922	+ 5.34
Total	1,343,698	1,256,025	1,193,858	+ 5.21	8,337,186	7,814,787	+ 6.68
Daily Average	43,345	41,868	39,795	+ 5.21	30,539	28,626	+ 6.68
Increase over previous year:							
Amount of Incr.	.....	62,167	.....		522,399	.....	
Percentage Increase in Daily Average	.....	5.2%	.....		6.7%	.....	

	Quarter Ending June 30, 1930	Sept. 30, 1930	Sept. 30, 1929		Sept. 30, 1930	Sept. 30, 1929	
California	347,735	357,199	334,457	+ 6.80	1,000,395	929,745	+ 7.60
Pennsylvania	206,486	251,874	280,021	—10.05	662,460	653,452	+ 1.38

(a)—Estimated.

Independents Cut N. Texas Crude

By Telegraph

TULSA, Dec. 2.—Effective Dec. 1 a flat price of 85 cents at the refinery or 65 cents per barrel at the wells for all grades of crude was posted by the American Refining Properties, Wichita Falls, Dale Oil & Refining Co., Electra, and Olney Oil & Refining Co., Olney, all in north Texas.

Gasoline Stock Increase Small in October

By Telegraph

WASHINGTON, Dec. 1.—Stocks of gasoline at U. S. refineries increased only 430,000 barrels in October according to the monthly survey of the Bureau of Mines. Total stocks Oct. 31 were 38,684,000 barrels, as compared with 38,254,000 barrels on Sept. 30. Production of gasoline was reduced 15,000 barrels daily average to 1,206,000 barrels per day in October.

Stocks of crude oil increased for the first time in several months in October. East of California stocks of crude oil rose 4,837,000 barrels. On the West Coast stocks were reduced 848,000 barrels.

Kerosine stocks were reduced 138,000 barrels during the month, when output was cut 3000 barrels daily average to 125,000 barrels per day. Supply and demand for gas oil and distillate fuel also were nearly in balance with stocks being cut only 113,000 barrels during the month. Residual fuel stocks, however, increased 638,000 barrels.

In spite of a cut of 9000 barrels daily average in lube output refiners increased their stocks 245,000 barrels to 10,502,000 barrels. Wax stocks were reduced 8,880,000 pounds to 240,060,000 pounds when refiners dropped their production 237,000 pounds daily average.

Automobile Dealers Are Getting Warmer On Car Lubrication Business

By Roger B. Stafford

N. P. N. STAFF WRITER

DETROIT, Nov. 25 AUTOMOBILE manufacturers plan to urge their dealers to pay more attention to lubrication than in the past but the oil industry need fear no immediate general loss of lubrication business to the car dealer's service station.

This assertion is made after interviews with service managers of manufacturers whose sales this year are between 85 and 90 per cent of all automobiles sold in the American market.

The service managers believe, most of them said, that the car dealer's service station is the proper place for the owner to take his car but a majority realize that car dealers cannot hope to get more than a small percentage of their car customers back for periodic lubrication service with their present set-ups for such service.

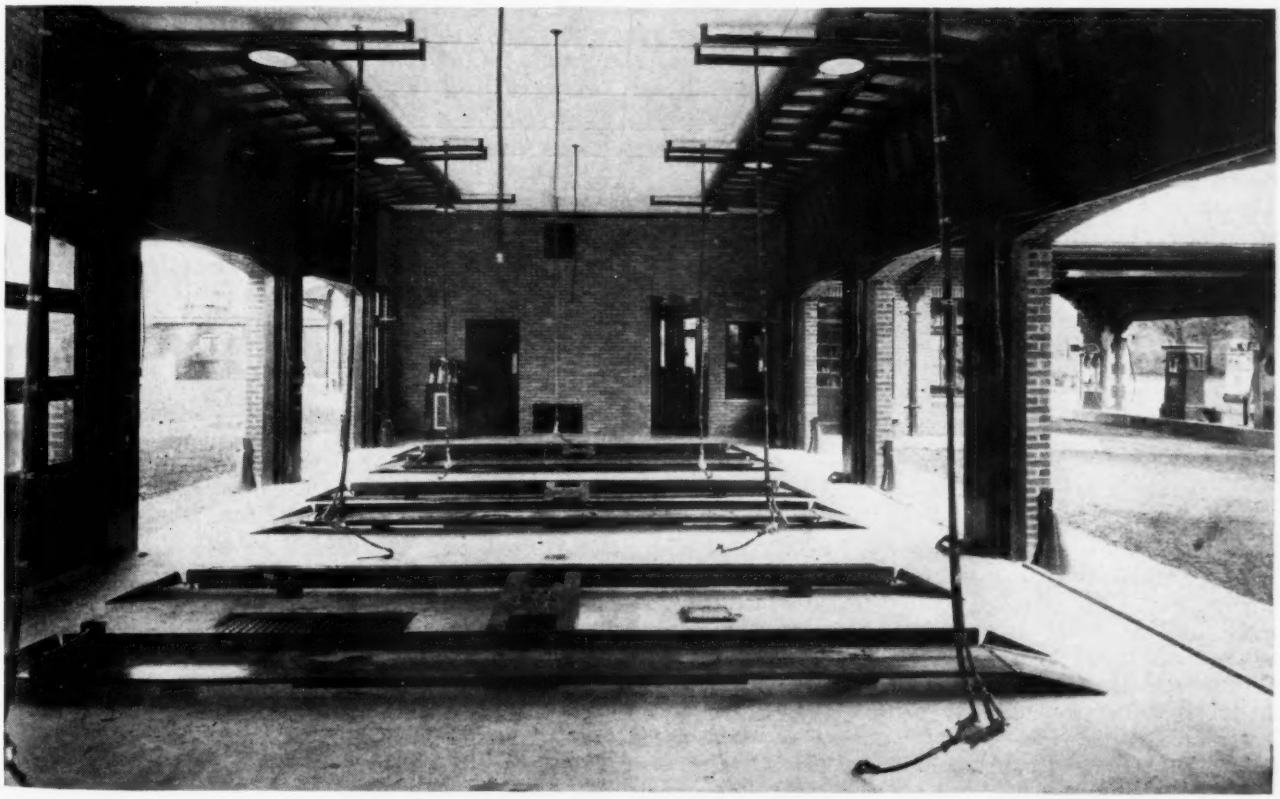
There is a surprising amount of frankness by service managers of most car manufacturers in discussions of automobile lubrication and who should do it.

It is the general opinion that oil company lubrication work is the result of a weakness in the marketing set-up for automobiles. When car sales were booming, and hundreds of thousands of new owners were being enrolled each year, the car dealer had little time and less inclination to look to service other than mechanical.

Then was the time when dad spent Saturday afternoon or Sunday morning with an oil can going over the pride of his heart. Later, when high pressure lubrication came in, he substituted the small grease gun and a can of No. 3 cup grease for the oil can.

With high pressure lubrication came the lubritorium, first a crude affair outdoors with a rack built of rough lumber. Then followed some indoor installations, usually pits. Today we have the specially designed lubrication station or wing to a service station. These usually have mechanical lifts or ventilated pits with specialized tools, and drain, oil and grease lines so the work may be done quickly.

The lubrication work quickly passed to the stations of the oil companies who were alert to a



A good example of why oil companies have been able to build up and hold the car lubrication business. The station above illustrates a lubrication department easily accessible to two or three cars at a time, convenient for the customer to watch the work on his car and with modern equipment for doing this work thoroughly

developing market. The car manufacturers paid little attention to this non-mechanical but necessary service until about two years ago, when a manufacturer of lubrication fittings and tools sold the Ford Motor Co. a merchandising plan by which Ford dealers were expected to get frequent contacts with their car customers and also to increase the revenue of their service stations.

Ford has since dropped this merchandising plan but its dealers have been urged by the home office to maintain frequent contacts with customers by having some means of bringing car buyers back to their service stations. Most Ford dealers consider any Ford company suggestion a mandate. As a result they installed lifts at conspicuous and convenient places in their service stations this year and in 1931 they will probably install some lubrication system standardized for Ford dealer service stations. Some sort of lubrication merchandising plan will be decided on by Ford in the next two or three months, it was said at the Ford offices at Dearborn.

CHEVROLET service calls for a contact with car buyers at least once in 60 days. This company's follow-up system, drafted for its dealers, provides for a telephone call on all buyers every two months, with a mail follow if the buyer cannot be reached by telephone or if he fails to call at the dealer's station after setting a date by telephone to call.

Chevrolet also is advising dealers to place their lubrication equipment where it is handy for the customer and where advantage may be taken of the curiosity of most car owners to see the lubrication job done. The company found, by removing the lift of one Chevrolet dealer in Detroit from a dark corner in an upstairs room to the ground floor where it may be seen by customers when they enter a dealer's station, that the volume of lubrication work secured was greatly increased.

Chevrolet has also published a brochure for dealer station managers and service salesmen, telling them how to contact customers for lubrication work. It has standardized its lubrication at $1 and also is featuring the fact the work will be done while the car owner waits.

Fords and Chevrolets have made up about 65 per cent of the total new car sales this year. Most dealers have sold enough cars this year and last that they could afford to have one man spend his whole time in lubrication work if a considerable portion of their customers can be induced to return regularly for lubrication service.

IT IS recognized, however, that not many car owners will drive far out of their road to visit a dealer's station unless they seek mechanical service. However, the fact has been stressed, and probably will be stressed considerably more in the future, that dealers' service men are trained especially in the particular make of car and are more competent to lubricate that car correctly than the corner filling station operator who has only a superficial knowledge of most cars.

Against this contention the oil companies that have taken lubrication work seriously and have invested many thousands of dollars in it, point out that their men are supplied with detailed lubrication charts and are trained to use lubricants developed for their particular tasks. These oil company stations, it is pointed out, are not to be confused with the corner filling station operated by some individual who may be in the oil business this year and in something else next year.

The assertion was refuted that dealers in high priced cars have always been able to get their customers back for lubrication service. Service managers for makers of three high priced cars in Detroit said they believed the returns of owners of high priced cars for lubrication was no more proportionately than for owners of low and medium-priced cars.

Some dealers of high priced cars, one service manager said, discouraged the return of buyers of old model used cars to their stations because the appearance of a weather worn vehicle among bright new models was akin to a poor relation attending a society girl's debut.

However, with the improvement of design in cars and the need for less mechanical service each year, dealers are finding that something must be done to give profitable employment to a station personnel that must be maintained if the dealer is ready to serve whenever a customer for adjustments or repairs comes in.

Manufacturers also realize that the quality and completeness of service their dealers are able to give customers are important factors in sales of new cars. The possibility of extending sales to persons who have not previously owned cars is becoming less each year although the number of non-owners is still unexhausted. The manufacturers see no better way of getting repeat owners than by maintaining periodical contacts and favorable impressions with present owners by doing a good lubrication job for those present owners.

Although no definite plans seem to have been adopted by most car manufacturers to get their customers into dealers' stations for lubrication, the manufacturers are giving deep thought to the possibilities and many probably will adopt a lubrication merchandising plan before 1931 is over.

BUT whatever may be done, our industry is assured that no manufacturer will make specific recommendations as to the brand of oil or grease to use. Several manufacturers in the past have made specific brand recommendations but they admit they have learned a lesson.

They are out to maintain the friendship of the oil companies. Specifications and not brands will be their limit.

Almost all express a willingness to co-operate with the oil companies in developing the proper kinds of lubricants for the various bearings of their cars. One suggested a central clearing house where such development might be worked out by the oil and automobile industries, such as the Society of Automotive Engineers.

But if the manufacturers are not able to get all their dealers to solicit lubrication work, enough will go after the business on the basis of expert knowledge of the cars they sell to make oil companies hustle to increase their present volume.

This new one-stop station, averages about 40,000 gallons of gasoline a month. It is Motor Service Inc., owned by Ben Gerwe, at Davenport, Iowa

Tires Outsell Gasoline at New Oil Company One-Stop

By E. L. Barringer

N. P. N. STAFF WRITER

DAVENPORT, Iowa

IN THE period of business depression an oil company one-stop service station was born early this year in Davenport, Iowa. Through the summer it was nourished on increasing competition, price reductions in many commodities, and on a loss of tourist traffic through the city. Yet, at the age of nine months, this one-stop station can give a good report on the efforts of an oil merchandiser who turns his hand to tires, batteries, brake servicing and accessories.

At the end of eight months the station was selling more tires than gasoline, on a dollar for dollar basis, and this at a station moving gasoline through its pumps at a current rate of about 400,000 gallons for the 10 months.

Many an oil company would be satisfied to bring along a station at this space, a station that has yet to see its first birthday, but to its owner, Ben Gerwe, this is only a modest start. He enumerates the difficulties of the year: competitive price reductions, the increased number of shoppers for automotive goods, and the decreased tourist traffic; and adds his own lack of time in giving the new enterprise attention.

Mr. Gerwe will be remembered as the 1,000,000 gallon a year jobber with one service station.* That was his sales record for 1929 in the face of stations just across a no-toll bridge over the Mississippi river in Illinois having no state tax until August, 1929.

His new station was opened in March, and operates as Motor Service, Inc. It is across the street and down half a block from the one station of the Davenport Oil & Supply Co., the 1,000,000-gallon station. Gasoline storage is back of the Davenport oil company station, along the railroad tracks, and the only trucks operated haul gasoline to the nearby new Motor Service station.

In looking back over the first nine months of his new one-stop station Mr. Gerwe finds brake servicing one of the best departments because of less price competition and in ability

Tires Outsell Gasoline

PERCENTAGES, by departments, of gross sales for eight months of Motor Service Inc., new one-stop station of Davenport Oil & Supply Co.

	Per Cent
Tires	23
Gasoline	22
Battery	16
Brake Servicing	13
Motor Oil	9
Car Washing	6
Lubrication	5
Lac R Shine	3
Miscellaneous	2

Miscellaneous also includes accessory sales.

*NATIONAL PETROLEUM NEWS, March 5, 1930, p. 79.

to satisfy the customer. A brake relining job or adjustment, he points out, permits a good station to turn out a job that satisfies the customer.

Price competition enters brake work, too, but being a service and not merchandise used directly by the consumer it is not subjected to the same comparison as with other automotive goods. A customer needs brake relining at infrequent intervals, said Mr. Gerwe, so the reputation of the place of business carries more weight than mere price.

He finds the car washing department turns in more than its share of trouble. "It is a source of grief," Mr. Gerwe said, "and after you do a good job the customer declares up and down that you haven't touched his car."

Allied with car washing is polishing, and this department has turned in during the eight months 3 per cent of the station's gross volume in dollars, or half of that for car washing. This is the Lac R Shine department, and the complete wash and polish is sold for $10 or $11. After a car is washed two mechanical brushes are used to polish the car to remove any coats of dirt and to restore its original lustre.

With tires and batteries he has found much price competition. The customer has a range, especially the commercial user of tires, and is doing considerable shopping before making his purchases. With accessories, however, there is no tendency to shop around and compare prices. When the customer is in need of an accessory part he will buy it without questioning the price, Mr. Gerwe finds.

Ben Gerwe

Head of the Davenport Oil & Supply Co., and Motor Service, Inc., Davenport, Iowa. His one-stop station, Motor Service, opened last March will sell more tires than gasoline; and will move about 400,000 gallons of gasoline this year

The handling of labor, to have it where it is needed, has not been a problem at Mr. Gerwe's station. Some one-stop station operators have pointed out a disadvantage of the inflexibility of labor and the problem of keeping the labor supply in balance with the demands for service.

Technical training is needed for the brake and battery man. Each of these men work only during the day, employes for gasoline and lubrication are on shifts. Demands for brake and battery service come during the day so it has not been necessary to have men on duty exclusively for these departments in the evening.

The battery and brake workmen make valuable gasoline salesmen, Mr. Gerwe has found. Although their primary jobs are in these departments, yet the amount of work they do can be increased by customer contact. If the brake man observes the customer's efforts to stop the car at the pump he can use his salesmanship to get that customer on the brake lifts while selling gasoline; and the same opportunities are available for the battery men.

Following is the complete list of goods and services at Motor Service, Inc.:

Tydol gasoline, Ethyl and high test.

Veedol, Mobiloil, and Pennzoil motor oils.

Alemite greases.

Kelly-Springfield tires.

USL and Grant storage batteries.

J. & M. brake lining.

Champion spark plugs.

A. C. oil filters.

Arvin auto heaters.

Prestone and alcohol anti-freezes.

Mazda lamp bulbs.

Weed chains.

Monkey chain links.

Purgo radiator cleaner and cement.

Shino auto cleaning cloth.

Kelley top dressing.

Hose connections, battery cables, and windshield wiper blades.

No Stations on This Modern City Highway

Opening of the new West Side Motor Express Highway in New York, already completed from Canal Street near the lower end of Broadway to 21st St. When completed the elevated structure will be 11 miles long. The present section has cut down motor vehicle traveling time from 11 to 23 minutes. Completion of the 11 mile elevated from lower New York uptown will change the nature of the flow of motor travel and have its effect on gasoline distribution in this area

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Byron Jackson Co., Graybar Bldg., New York, announces the return of John H. Baird as head of its export sales office at New York. Mr. Baird has been on a leave of absence due to illness.

Standards' Cash Dividends Highest in 1930

CLEVELAND, Nov. 29

A RECORD height was established by the Standard Oil companies in dividend payments this year. The cash payments for 1930 total $286,666,728, according to a compilation made by Carl H. Phorzheimer & Co., specialists in Standard Oil securities. The amount is $17,020,801 more than the 1929 cash dividends which was a record to that time.

The fourth quarter dividends of the Standard Oil companies will amount to $83,047,644, a record for any quarter. This sum was made possible by extra dividends of 25 cents a share by Standard Oil Co. (N. J.), 50 cents a share by Imperial Oil, Ltd., $1 a share by Chesebrough Mfg. Co., 50 cents a share by Prairie Pipe Line Co., 20 cents a share by Standard Oil Co. of Kentucky, 25 cents a share by Vacuum Oil Co., 25 cents a share by Atlantic Refining Co., and 25 cents a share by Indiana Pipe Line Co.

Humble Oil & Refining Co. has declared an extra dividend of 50 cents a share but this dividend is payable Jan. 1 so is not included in the compilation.

While Standard Oil Co. of Indiana did not pay an extra dividend this year it maintained its rate of $2.50 a share a year on the increased volume of stock it has outstanding because of the exchange of its stock for that of Pan American Petroleum & Transport Co.

In addition to these cash extras the Standard Oil Co. of California is paying 2 per cent in stock this quarter.

Outside the Standard Oil group Texon Oil & Land Co. is paying $1 a share extra this quarter and Sun Oil Co. is paying 9 per cent in stock.

Only a few oil companies omitted their dividends on common stock this year. A few reduced their dividend rates, the latest being Sinclair Consolidated Oil Corp., which cut its rate from 50 cents to 25 cents for the quarter.

Sinclair announced its volume of business this year has been the largest in its history but that general conditions, oversupply and under-consumption and low prices had made it impossible to realize satisfactory profits from operations.

"Looking to the future," the company announced, "the board believes that it is in the best interests of stockholders to maintain the exceptionally strong position of the corporation by a conservative course at this time. It is for these reasons that the dividend payable Jan. 15, 1931, will be at the rate of 25 cents a share instead of 50 cents a share paid in the three previous quarters."

The "exceptionally strong position" was in reference to Sinclair's cash position. This fall it received $72,500,000 from the Standard Oil Co. of Indiana for its share in the Sinclair Pipe Line Co. and Sinclair Crude Oil Purchasing Co. This cash exceeds the present market value of Sinclair common stock or is sufficient to extinguish almost all the Sinclair funded debt. It also is more than four times the par value of Sinclair's preferred stock.

Standard Oil Dividends

(By Quarters, for Five Years)

First Quarter	
1930	$66,722,168
1929	63,101,701
1928	48,927,760
1927	55,873,413
1926	40,580,317
Second Quarter	
1930	$68,590,901
1929	66,053,339
1928	57,694,206
1927	54,291,615
1926	50,618,451
Third Quarter	
1930	$68,306,015
1929	65,426,981
1928	50,068,102
1927	47,728,440
1926	46,443,278
Fourth Quarter	
1930	$83,047,644
1929	75,063,856
1928	62,050,357
1927	55,804,755
1926	62,685,548
Full Year	
1930	$286,666,728
1929	269,645,927
1928	218,740,335
1927	213,698,223
1926	200,327,594

Hoover Suggests Survey Of Anti-Trust Laws

WASHINGTON, Dec. 2.—In his annual message to Congress today President Hoover recommended that Congress institute an inquiry into some aspects of the economic working of the anti-trust laws. He said that he did not favor the repeal of the Sherman law because "the prevention of monopolies is of most vital public importance. Competition is not only the basis of protection to the consumer but is the incentive to progress."

"However," continued the President, "the interpretation of these laws by the courts, the changes in business, especially in the economic effects upon those enterprises closely related to the use of the natural resources of the country, make such an inquiry advisable.

"The producers of these materials assert that certain unfortunate results of wasteful and destructive use of these natural resources together with a destructive competition which impoverishes both operator and worker can not be remedied because of the prohibitive interpretation of the anti-trust laws.

"The people have a vital interest in the conservation of their natural resources; in the prevention of wasteful practices; in conditions of destructive competition which may impoverish the producer and the wage earner; and they have an equal interest in maintaining adequate competition.

"I therefore suggest that an inquiry be directed especially to the effect of the workings of the anti-trust laws in these particular fields to determine if these evils can be remedied without sacrifice of the fundamental purpose of these laws."

Oppose Low Rates to Meet Pipeline Competition

By Telegraph

ST. LOUIS, Mo., Dec. 2.—Opposition to proposed freight rate reductions to meet gasoline pipeline rates from refining points in Oklahoma to Kansas City, St. Louis and Chicago developed at a hearing before the Southwestern lines Freight Rate Committee in St. Louis today. Representatives from many points whose present differential rates would be disturbed presented their arguments showing that publication of the proposed rates would be to their great disadvantage.

Tank car companies and several refiners operating cars under lease were opposed to the proposal in that it included the abolition of payment of loaded car mileage.

The Santa Fe, which had not been included in the list of roads offering the original proposal, expressed itself as willing to make the proposed reductions to meet gasoline pipeline competition including in its offer the maintenance of present freight rate differentials between the points affected.

Some opposition developed on the ground that it would have a much wider sphere of disturbing influence than appeared on the surface and that it would tend to disrupt the entire marketing structure unless made equally applicable to all refining points. The proposed rates were characterized by some as a shot in the dark since the rates to be charged by the gasoline pipelines have not yet been determined.

Phillips Buys Pipeline Terminal Site

TULSA, Nov. 29.—Acquisition of a 114-acre tract to be used for a gasoline terminal at Kansas City, was announced this week by officials of the Phillips Pipe Line Co., subsidiary of the Phillips Petroleum Co. of Bartlesville. The company was reported to have paid $170,795 or $1500 an acre for the tract. The terminal will be used in connection with the company's new gasoline pipeline being laid from Borger, Tex. to Kansas City and St. Louis.

The Phillips terminal, located on the river, is just south of the 111-acre tract acquired by the Great Lakes Pipe Line Co. The latter company this week started development of the site. Each of the terminals will handle approximately 12,000,000 gallons of gasoline. The investment in the two terminals will be close to $1,500,000, it was reported. The Great Lakes terminal probably will be the first one completed, as that company expects to deliver gasoline via pipeline to Kansas City soon after Jan. 1.

Small Producer's Future To Be Discussed

GREAT FALLS, Mont., Nov. 29.—The small operator and what the future holds for him will be up for discussion at the joint meeting of Montana and Alberta oil men here Dec. 12 and 13, according to Walter F. Brittan, secretary, Rocky Mountain Oil & Gas Association. W. M. Fulton, president of the Montana division of the Independent Petroleum Association of America, will be the speaker.

Other addresses of interest to oil producers will be one on the oil tariff by Harry H. Rogers, president, Exchange National Bank, Tulsa; and a geological paper by E. B. Emrick, consulting geologist.

Principal speakers for the Oil and Gas Association of Alberta, include D. Austin Lane, Russell V. Johnson and F. J. Sur.

Refiners and jobbers of Montana and Wyoming, who will also meet, will be addressed by W. H. Cochran, general manager in Rocky Mountain territory of the Standard Oil Co. of Indiana. Directors of the state committee on the code of ethics will meet during this convention.

There will be group meetings of producers, taxation and legislative committees.

The convention will be at the Rainbow Hotel here.

To Take Only One-Third Of Small Well Output

By Telegraph

TULSA, Dec. 2.—Prairie Oil & Gas effective Dec. 1 made still another cut in purchases in Oklahoma, Kansas and Texas when it announced a new policy of taking only one-third of the production it has been buying from the so-called class "A" wells. This includes those exempt until a short time ago from proration. Recently proration has been established on such wells to prorate the excess over five barels daily.

Prairie will take only a third regardless of their production.

Such districts as the Nowata and Washington counties of Oklahoma and eastern Kansas oil fields where Prairie is in many cases the only pipeline serving a pool are badly hit by the new policy.

In many cases one-third of the production at present prices will not pay running expenses and such properties will be forced to shut down. The move was in line with the Prairie's plan to reduce its purchases to the level of what it can sell and as its deliveries have steadily fallen in recent months its purchasing position has of necessity been reduced.

What can be done to meet the situation is not certain. The proration committee for Oklahoma met Monday, but adjourned to await more definite information as to just what amount of oil is thrown back by the Prairie's reduction. If proration is continued Oklahoma will have to go on an allotment of much less than a half million barrels daily.

Hoover Policy Upheld

WASHINGTON, Dec. 2—The Court of Appeals of the District of Columbia today upheld President Hoover's oil conservation policy in respect of the issuance of permits to explore the public lands for oil and gas. The court reversed a decision of a lower court awarding a writ of mandamus requiring Secretary Wilbur to reinstate the application of Roy G. Barton in the Las Cruces, N. M., Public Land office.

Chromium and Nickel Alloys Build Protective Film on Steel

By William F. Lowe

N. P. N. STAFF WRITER

TULSA, Nov. 29 OPERATING costs due to the corrosion of oil field tubular goods, may be greatly reduced if a steel alloy containing small percentages of chromium and nickel is used. The protective film that is characteristic of this alloy is very effective in combating the corroding media common to the industry. Artificial coatings for pipe protection under ground have not yet reached 100 per cent efficiency, nor has the control of boiler corrosion been brought to its proper plane.

These points were the outstanding features of an address given by Dr. F. N. Speller, director of the department of metallurgy and research for the National Tube Co., Pittsburgh, before a special meeting of the Mid-Continent section of the American Institute of Mining and Metallurgical Engineers, Nov. 21, in Tulsa. Dr. Speller illustrated his talk with slides showing the progress of research in metallurgy and the effects of corrosion on oil field equipment.

In discussing the various metals that had been experimented with in the search for corrosion resisting alloys, the speaker emphasized the fact that the first problem to be overcome had been one of cleaning up the steel. The elimination of all foreign matter possible in every heat came as a first consideration. With this process perfected, it was found that a steel alloy composed of chromium and iron, in the ratio of about one to 10, was best suited for ordinary conditions. In this proposition, the chromium carried over to the steel alloy its property of creating a protective coating.

Little is known concerning this coating beyond the fact that it is an oxide and is cathodic to the metal. So nearly is it a part of the metal that it is invisible to the naked eye and almost immeasurably thin. It is a natural coating and its growth is promoted in two ways: by the proper choice of metals, or by changing the nature of the corroding environment so as to produce by reaction with the metal a more insoluble coating.

Both aluminum and chrome-iron protect themselves in this way in certain environments. In the presence of oxygen both will form durable films in a short time. It often happens that a compound coating is more resistant than a single one. An 18-8 nickel-chromium alloy, for example, when exposed in water or air, is better than the 18 per cent chromium-iron alloy. If a little silicon or aluminum is thrown in a further resistance is added, particularly under high temperature oxidation.

METALLIC coatings, while usually porous, may assist in bringing about the formation of a more stable film if the base metal contains elements which will react to build up a more continuous insoluble coating. For instance, galvanized steel carrying a small amount of copper has been found to be much more durable in salt water than ordinary galvanized steel. This is probably due to the precipitation of copper by the zinc after corrosion of the steel has started at breaks in the zinc alloy. A small amount of copper, (0.3 per cent), however, has very little influence on the life of the base metal when immersed in fresh or salt water or buried underground.

The second method of film building is illustrated by the use of alkalis, chromates and other so-called "passivifiers." These render the metal inactive toward the solution by interposing an inert film. If this film building material is removed, the remaining film is easily destroyed by excessive heat, abrasion or chlorine ions. In closed systems this principle is sometimes more economical to use than are more expensive metals.

AN example of this may be found in the advantage with which chromates may be used in refrigerating brines and in recirculating water cooling systems. A zinc coating in brine may also be protected by carrying a pH of 7.5 to start with, in order to permit the formation of a stable coating of zinc carbonate and hydrate. When these compounds have formed and cover the surface, the pH may be safely raised to 10 or 11 to protect any exposed iron. The coating of zinc products is also less soluble at higher alkalinities.

Another method of forming a stronger and denser coating is by the precipitation of calcium carbonate, silicate and some insoluble compounds with iron rust in a water pipe.

All of these films separate corroding media from the metal, and many corrosion problems resolve around their stability. Both the metal and the corroding solution have an important influence in the building up and the maintenance of these films. It is also essential that the constituents of the metallic alloys be in solid solution, for any separation or precipitation of these constituents tends to weaken its resistance. The general result is a breaking of the protective film and the cre-

ation of local planes of weakness.

In the case of all artificial coatings, it is difficult to entirely prevent the contact of the corroding media with the metal. At present it is a question whether rust-resisting metals or metallic coatings will be more economical for certain purposes. The former is now very much in favor. Inside paint coatings have not proven particularly satisfactory, for they are not durable except in a limited flow and do not always prevent corrosion beneath their surface. The use of inhibiters in the priming coat is advisable.

Stress and other factors tend to localize corrosion, causing a nick to develop which, like any other break in the continuity of the metal, results in local stresses and progressive fatigue fracture. Inhibiters like the chromates maintain a continuous oxide film on the surface in spite of the stress. Dissolved oxygen is not only an important factor in stressless corrosion but is also important in stresses. It should then, be limited to the lowest amount practicable, about .03 cc per liter, in boiler feed water.

Soil corrosion is distinguished from other types by a more marked tendency to pitting. The action varies widely with different localities depending upon the soil in which the pipe is buried, and has practically the same effect on all of the wrought ferrous metals. Disastrous as pitting may be to the life of pipe it has been found by actual pressure tests that pits one-eighth of an inch deep have very little effect on its strength.

Certain types of soils exert a destructive stress on bituminous coatings. They grip it, shrink in drying, and pull the coating away from the metal. As a remedy for this, various materials such as aluminum, sheet steel, wood veneer and builder's felt are now being experimented with. They should prove fairly successful but they also serve to emphasize the fact that a stronger and more inert material is needed for pipe protection underground. Asphalt mixed with 70 per cent finely ground quartz would resist soil stress as well as corrosion. Portland cement mixtures are efficient coatings where the soil does not attack the cement.

In steam plant operation, better control is being obtained over corrosion in boilers by more thorough water conditioning to produce a protective scale. However, it is possible to overdo this practice and reduce efficiency. On the other hand a reduction in the scale beyond a safe limit will encourage corrosion.

Generally the (OH) content in the boiler should be limited to the amount which will prevent corrosion. This, however, is largely dependent on the amount of oxygen in the feed water. Both oxygen and alkalinity concentrations should be kept at the lowest possible figure.

Air leakage and acid steam are the principal causes of corrosion troubles in a steam heating plant. It is also thought that feed water treatment designed to produce the minimum amount of carbon dioxide and oxygen in the steam will do much toward the reducing acid steam conditions.

Hobbs Producers Vote To Extend Proration

By Telegraph

HOUSTON, Dec. 1.—Hobbs field New Mexico operators meeting in Dallas, Nov. 29, voted to extend proration an additional six months term when the present agreement expires. Market outlet continues at approximately 31,000 barrels daily against a rated potential for prorating purposes exceeding 1,000,000 barrels. The Amerada Petroleum Corp., and the Tidal Oil Co., asked that the outlet be raised to 50,000 barrels daily, but were otherwise in agreement with other operators.

The agreement must be signed by all Hobbs operators before presentation to the New Mexico state geologist and the newly elected land commissioner for approval. The land commissioner opposed restriction of oil production in his election campaign, but has made no public utterance on the subject since.

California Gas Statute Held Constitutional

By Telegraph

LOS ANGELES, Dec. 1.—The oil and gas conservation law in California has been held constitutional by the district court of appeals, in an opinion handed down Nov. 29.

The decision was on appeal from the Wilshire Oil Co. for a writ of prohibition to prevent the enforcement of a temporary injunction against gas waste in the Santa Fe Springs field issued by the superior court in March.

The appellate court held that the conservation act does not unlawfully deprive the petitioners of their property; that its provisions fall within the legislative authority of the state and, further, that the owner of surface lands gains absolute title to oil and gas only when reduced to possession.

The conservation statute was passed by the California legislature in the spring of 1929 to become effective in August. It gave the state the right to prescribe the amount of gas that could be produced in individual fields, in the interests of conservation of this natural resource, and, in this same connection, the right to set the ratio of gas to oil production in the oil fields, which would, in itself, provide a means for regulating the production of oil.

In its effort to find a means to enforce the law, which was new in state regulatory measures, its officers filed a blanket proceeding before Superior Judge Hazlett asking that all oil and gas companies in the Santa Fe Springs field be restrained from wasting gas. A number of companies, the Wilshire Oil interests taking leadership, opposed this move in court and presented evidence to show the damage to their properties under such restricted production. Judge Hazlett ruled for the state and issued the restraining order, being upheld by the current ruling of the district court of appeals.

The case is also before the state supreme cout, and a ruling is expected Dec. 5.

To Change Oklahoma City Proration Plan to Percentage Basis

By Lawrence E. Smith
N. P. N. STAFF WRITER

OKLAHOMA CITY, Nov. 29 THE corporation commission will issue an order about the first of the year changing the present time method of proration in the Oklahoma City field to a percentage plan. It so indicated on Nov. 25, when a hearing that lasted more than a day, was adjourned to Dec. 15.

The plan submitted to the commission by the operators provides that a four-hour open flow test shall be taken of each well to determine its potential. The number of barrels flowed in that period, multiplied by six, will be the 24-hour potential that will be used as the basis for allocating allowable production. Proration in effect since the field first got ahead of pipeline capacity has been of the time variety. Each well was permitted to produce so many days or hours in a given period, with no attention paid to the amount it could produce.

To the industry generally it would seem that such a change would not be important. It is, however, in that it will provide for the first time in many months something other than a guess as to what the capabilities of this field are. The huge potential of the field, claimed to be in the neighborhood of four million barrels, has been arrived at by taking the last recorded flow of the well and if it was for less than 24 hours raising it to that time basis.

In many cases new wells of the big gusher variety common to the northwest part of the pool flowed for but a few minutes after they came into production. Then, with tankage filled and no pipeline relief, they were shut in. Thus, the estimated potential of the field is a patchwork affair, probably bearing little relationship to the realities.

H. M. Stalcup, vice-president of the Skelly Oil Co., while on the witness stand in the hearing, commented upon the fictitious potential that has been set up. He said it was his opinion that a four-hour gage of the wells, taken within a short period, would not show more than two million barrels to be the potential on 24 hour basis.

Wirt Franklin, president of the company that bears his name, told the commission that the time method of proration has become chaotic. He said there was no adequate check on the time wells are being kept open and that it would be possible for an operator to report to the umpire a lesser time of open flow than actually had been had.

The proposed plan would require operators to report daily to the umpire and the commission the number of barrels produced, together with the amount of gas that came with the oil, and this report would be checked against the one that would be required of the pipeline companies and the railroads, showing how much oil was moved from the various properties.

Mr. Franklin said the percentage method would reduce the cutting of connections by sand flowed with the oil, a hazard that exists in most of the wells producing from sand horizons in this field. The percentage method would make it possible for the operator to flow his wells under back pressure. That would hold back the movement of sand out of the well.

He said the percentage plan is but one step in reducing the encroachment of water into the sand producing horizons, which is now giving considerable concern. In general, Mr. Franklin said, the plan would be more equitable and would result in greater final recovery of oil.

Through General Counsel E. H. Chandler, the Sinclair Oil & Gas Co. suggested a number of rules to govern the taking of potentials including a provision for tankage for the entire flow. He objected to installing a gas meter for each well to measure the gas flow.

The Coline Oil Co. objected to the proposed plan. Its contention was that no potential can be taken that would be fair, as the wells vary so greatly in their manner of flow. Further, it was testified by E. A. Paschal, petroleum engineer for the company, the production that will be permitted to come from each well will be so small that the benefits of continuous flow under back pressure cannot be realized and no matter what it is called, it will still be the time plan. The T. B. Slick Estate joined the Coline in this view.

As the final witness for those who asked for the change, Mr. Stalcup said the percentage plan will give each operator an opportunity to conserve gas. The methods hitherto used in the field, said Mr. Stalcup, have been "criminally wasteful." Under the proposed percentage plan hazards that come with the frequent opening and closing of wells will be reduced. Each operator can experiment with his wells to see whether they perform in accordance with the allowed percentage best on a five, ten, fifteen-day or some other period out of the total proration-period.

A point stressed was that the percentage plan will afford a better balanced supply of gas to the gasoline plants.

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Read how quickly and easily each style operates—Type 34 Folding Handle Quick Hose Coupling, shown at the right; Type 36, pictured at the left. See how vast an improvement they make over all couplings hitherto used. Then send for a sample of one or both. Give it a 30 or 60 days' trial. If it does not prove entirely satisfactory, you may return it for credit or refund. Illustrated circulars will gladly be sent to you on request.

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Quick Hose Coupling
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Progress to End Disproportionate Crude Oil Runs Is Made

By Paul Wagner

N. P. N. STAFF WRITER

HOUSTON, Nov. 28

ACTING under authority of the Railroad Commission of Texas, contained in its new prorating order limiting the state's production to 680,238 barrels daily, purchasers are attempting to adjust crude oil takings from the Wichita Falls district so as to eliminate disproportionate runs.

The railroad commission, functioning as a conservation agency and also administering the state's utilities laws, has announced it will enforce to the letter the Texas common purchaser, or pipeline, statute designed to prevent discrimination in purchases or runs.

In the Wichita Falls district, where some 13,000 old wells are prorated at 52,395 barrels daily for the 60 days' period dating from Nov. 25, there has existed one of the industry's greatest problems in equitable handling of curtailed production.

Different buyers applied varying percentages of reductions to wells in their respective groups in order that runs might be made conformable to purchase nominations in the recently expired 90 days' prorating period. A result was that adjoining wells or properties, when connected to different pipeline facilities, were frequently served disproportionately.

For example, under over-connected conditions, a company might cut its runs to say 38 per cent of the oil produced in excess of the recent marginal well allowance of six barrels per well in order to get within its purchase nominations. Another buyer might find itself able to handle 60 per cent of the excess, the situation resulting in withdrawals being inequitable.

Until the railroad commission authorized "exchanges" of crude or connections to facilitate some system of equitable distribution of runs the buyers had feared to act independently. Immediately after the order, however, meetings were called at Wichita Falls and progress toward clarifying the situation is already reported.

Representatives of purchasers have signified to operators their willingness to make adjustments that will even up the withdrawals from over-connected and under-connected properties; each lease to get the new marginal well limit of four barrels per well, plus an equal part (probably about 60 per cent) of the balance.

E. H. Eddleman, receiver of the American Refining Properties, has been named chairman of the operators' committee. Other members are Bert Broday, Humble Oil & Refining Co.; M. W. Blair, United Producers Co.; W. D. Brookover, Panhandle Refining Co.; J. S. Bridwell, Bridwell Oil Co.; L. H. Cullum, Perkins & Cullum; Ed Coady, Prairie Oil & Gas Co.; Walter K. Campbell, Grayce Oil Co.; W. T. Waggoner, Waggoner Estate; P. B. Flynn, Reno Oil Co.; C. W. Hanley, Gulf Production Co.; H. P. Hodge, Magnolia Petroleum Co.; F. P. McGaha, Fain & McGaha Oil Co.; J. L. McMahon, The Texas Co.; Dan Mahoney, Stanolind Crude Oil Purchasing Co.; J. F. O'Donoho, Petroleum Producers Co.; T. O. Shappell, Shappell Oil Co.; W. H. Shanahan, Continental Oil Co.; and L. V. Hull, Wichita Falls district proration umpire.

TO WHATEVER extent may appear necessary similar steps will be taken in ironing out the problems of the general Ranger territory, where purchase nominations for the new proration period total 24,142 barrels daily. The number of wells affected in the Ranger territory is considerably smaller than in the Wichita Falls district, but to a large extent the problems involved are similar.

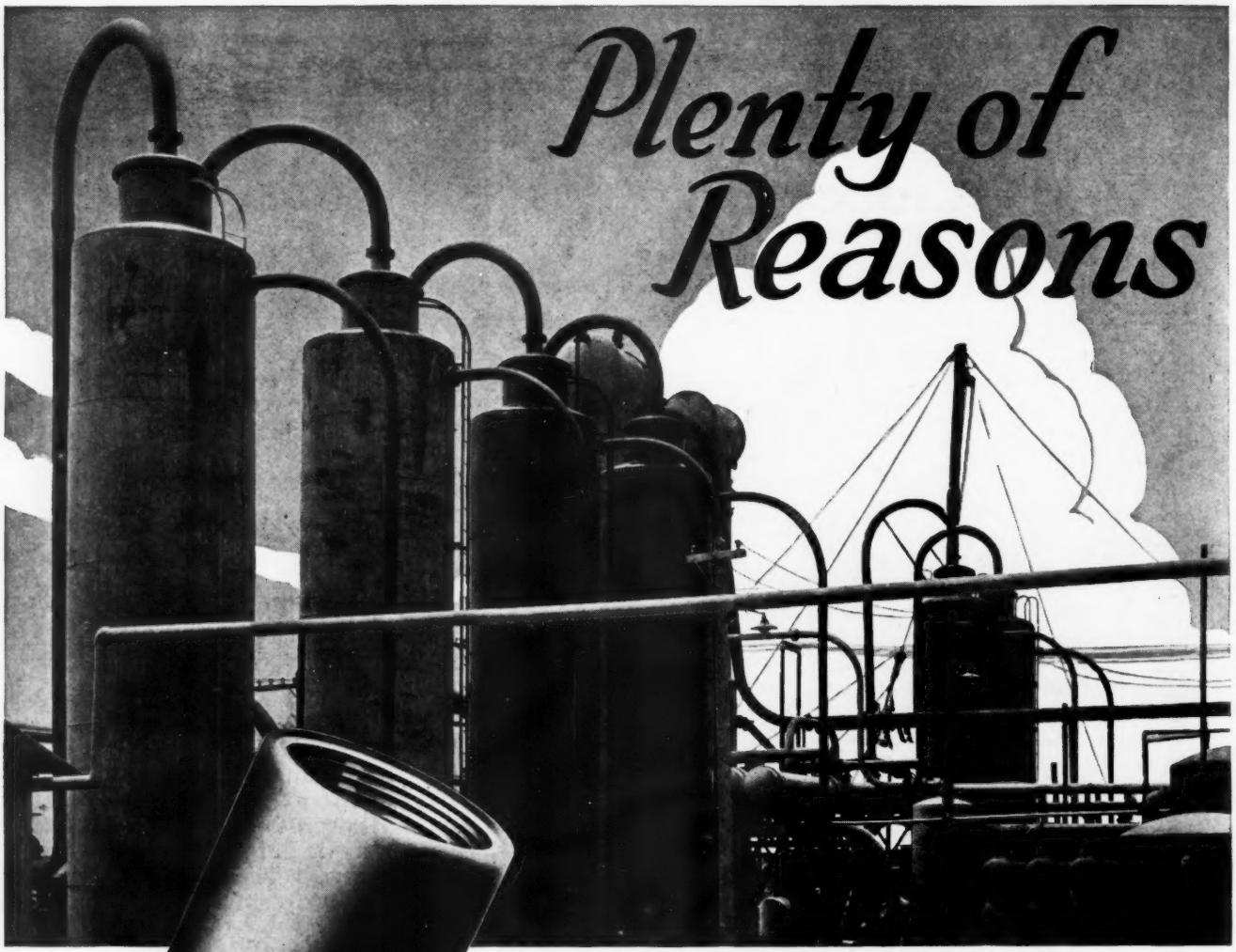
Northern Young county, formerly included in the Ranger territory, has been transferred to be a sub-district of the Wichita Falls area, but with separate proration allowance of 4850 barrels daily.

ESPECIALLY as regards the Wichita Falls, Ranger and Panhandle regions, the commission order fixing the state's allowable production at 680,238 barrels daily is made subject to future revision upward in case producers in the three general districts named are able to gain market outlets for increased quantities of crude oil.

The order is also elastic with regard to East Texas, permitting an increase of Van field production from 27,500 barrels daily at present to 35,000 barrels after Dec. 15, 1930 and varying larger quantities up to 50,000 barrels in February.

Regarding disproportionate withdrawals of oil from fields situated similarly to the Wichita Falls district, the commission order says:

"There are disproportionate withdrawals of oil taking place in localized areas, due to the fact that some properties are being produced under varying degrees of curtailment; that such disproportionate withdrawals or restrictions are resulting in the dissipation of gas energy, the actual physical waste of gas and the rapid and undue encroachment of water, all with resulting reduction in the ultimate quantity of oil to be produced from the fields and the districts involved and in the actual physical loss and waste, for all useful purposes, of that which can



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American Sheet and Tin Plate Company	Columbia Steel Company	Illinois Steel Company	Tennessee Coal, Iron & R. R. Company
American Steel and Wire Company	Cyclone Fence Company	National Tube Company	Universal Atlas Cement Company

Pacific Coast Distributors—Columbia Steel Company, Russ Building, San Francisco, Calif. *Export Distributors*—United States Steel Products Company, 30 Church Street, New York, N. Y.

not be recovered.

"Unless the restrictions be uniformly applied in a given pool or field, waste of gas and oil will necessarily result and will also result from the fact that certain producers who have no market for their products will be compelled to store same and thus increase unnecessary fire hazards and increase losses through evaporation.

"It is essential to the prevention of waste that restriction upon production shall be uniformly applied within the various fields or districts and that necessary arrangements should be made by purchasers and transporters of oil, working in cooperation with the railroad commission with a view of assuring such fair and ratable taking."

The official order says with regard to the West Texas district, prorated at 251,377 barrels daily, that it is contemplated the Big Lake field of Reagan county will be reduced in production by control of deep wells now producing there. In the allotment, total production from Big Lake was placed at approximately 12,000 barrels, representing only production from the shallow (2800-3000 foot) pay horizon, and, says the order:

"During the 30 days' period from and after Nov. 15, 1930, unless such reduction is sooner accomplished, the allowable production from the West Texas district will be increased by the amount the Big Lake field is allowed to produce in excess of 12,000 barrels."

As previously reported,* other Texas districts get the following allowances in the prorating order: Panhandle, 64,616 barrels daily; East Texas, 38,355 barrels, including present 27,500 barrels from the Van field; southwest Texas, 84,503 barrels, including 30,000 barrels allotted the Darst Creek field of Guadalupe county under special prorating orders previously issued; and the Gulf Coastal district, 160,000 barrels.

Special orders already in effect covering specific areas are continued and it is announced as contemplated that further special orders may be entered to meet conditions arising.

*National Petroleum News, page 26, Nov. 26, 1930.

Prairie to Curtail Purchases Of Crude in Seminole Area

TULSA, Nov. 29

PRINCIPAL news in the mid-Continent the past week again was supplied by the Prairie Oil & Gas Co., which continued its orderly retreat from the large purchasing position it formerly occupied, in order to balance its purchases with sales of crude oil.

Its latest move affects the Seminole district. Prairie has been taking out of this entire district from 21,000 to 22,000 barrels daily of which more than 10,000 was produced from its own leases and those in which it has partnership interest. Something like 11,000 barrels is thus thrown back on other buyers and as all have plenty already the only thing to do is whittle off the takings from the district as much as the Prairie is ceasing to buy.

No date was set by the Prairie for disconnecting from the properties that will be affected. No public announcement was issued, but verbal notice was given to several whose oil the Prairie is buying that in the near future it would cease to purchase. It will produce, under proration, as much as it is permitted and will move that oil, through the common carrier Prairie Pipe Line Co.

In recent weeks the Prairie has withdrawn as a purchaser from the Panhandle district of Texas, from the Voshell pool of Kansas — these withdrawals taking effect on Nov. 27—and has reduced purchases in the Oklahoma City field, in north and central Texas and in Kansas generally.

In Kansas, where producers are feeling keenly the effect of reduced buying not only by the Prairie, but by other large purchasers, a meeting held Tuesday failed to arrive at a plan of action and adjournment was taken until Dec. 5. At that time, it was hoped, the committee would have definite recommendations to make on reallocation of the production to the buyers and pipelines so that each producer would get some part of his oil run.

The Oklahoma City situation remained unimproved over the week, with pipeline runs from the field averaging only 87,890 barrels—a loss of 15,221 from the previous week. Runs were as follows:

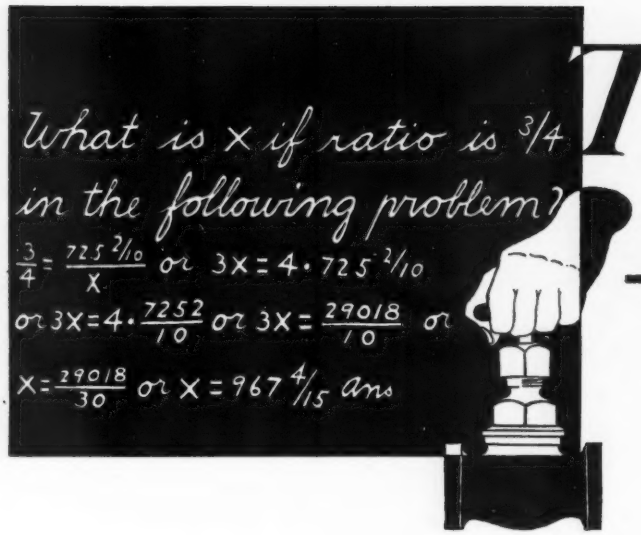
Empire P. L.	26,217
Indiana Territory	4,435
Magnolia	11,909
Oklahoma	16,302
Prairie	7,363
Stanolind	15,702
Shell	2,690
Tidal	1,671
Capitol P. & R.	.....
Cunard P. L.	.....
Champlin	1,610
Healdton	.....
Gulf States	.....
Peacock & Peveto	.....
Century P. L.	.....
Cushing Ref.	.....
Anderson & Prichard	.....

Cosden Posts West Texas

HOUSTON, Nov. 29—Cosden Oil Co. Inc., now operating under receivership, has posted a crude price of 50 cents a barrel for production in the Howard-Glasscock area of the West Texas region. Other purchasers have been buying Howard-Glasscock crude on a gravity basis, which begins at 50 cents for oil testing below 25 degrees and takes two cents upward differential for each degree of gravity to 36 degrees and above at 74 cents.

William B. McCormick Dead

HOUSTON, Nov. 29.—William Bennett McCormick, 60, known as the "father of the Louisiana oil and gas industry," is dead at Shreveport after a lingering illness. In association with the late Sam S. Hunter, he drilled the first well in Caddo parish, thereby opening the Caddo district as Louisiana's first oil producing area. Mr. McCormick also piped the first natural gas to Shreveport and drilled the first well in the Monroe district.


What is x if ratio is 3/4
in the following problem?
3/4 = 725 2/10 / x or 3x = 4 · 725 2/10
or 3x = 4 · 7252/10 or 3x = 29018/10 or
x = 29018/30 or x = 967 4/15 ans

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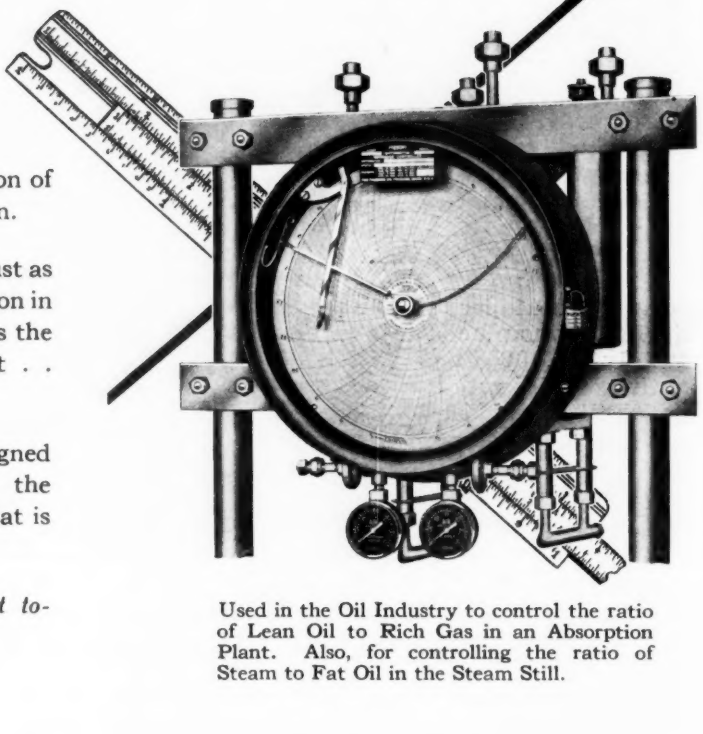

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An Open Letter

The Collins-Dietz-Morris Co.,
Wholesale Grocers,
Tulsa, Okla.

Gentlemen:

I address you on a subject that I believe will interest you and will lead to mutual profits. If you see the proposition the way I do, I can assure you that it will be no time at all until we are functioning. At this time I am without a situation of any kind and am able to start in business at the drop of your or anybody's hat.

The plan which I shall unfold to you was adapted from the oil business. A friend of mine who engaged in that line a year or so ago has done mighty well, starting out with neither experience nor money, and by observing the way he has gotten along I believe the basic principles of the scheme can be worked in another line.

Like my friend, I have neither experience in the line I have chosen, nor money to finance the enterprise. Like him, however, I am one of those boys who wears a No. 3 hat and No. 42 pants, same denoting the type of ability that has made good in running many of the filling stations that lurk here and there along the highways.

My idea is to start a restaurant and I am sure you are always looking for an outlet for your groceries. If you will finance a suitable building on a lot which I own, purchase the necessary fixtures, such as tables, chairs and one of those coat racks which when a certain number of hats and coats have been hung on it lets loose all holds and deposits the entire load on the floor. Furthermore, you will have to pay for the skillets, etc., which are used in the kitchen. I am a little hazy on what will be required, but if you people are really alert you will figure out all the details.

Then, after putting up the building and getting in the fixtures, you will have to hire me a cook and somebody to wait tables. I will preside at the cash register, although it may be necessary to get me a helper. A substantial cash advance from you will pay the help until we get on a profitable basis.

Your reward for starting me off will come through the outlet it will give for your groceries. I will assure you, in writing, that at no time while the business is paying you back your investment will I take on any other company's goods.

It is true that my lot is not located on a principally traveled street, but it is in a neighborhood that is certain to be more thickly populated some day and when that time comes we will have the advantage of already being on the ground. The oil industry has always had such foresight. My friend of whom I told you earlier in this letter illustrates the point. When he started in business he served only two or three cars in a day and now he averages ten, a gain of more than 300 per cent.

Hoping to receive an early reply, I am,

Yours Respectfully,
Ellick Botts,
Consulting Pumper,
Gray Horse, Okla.

* * *

Several changes have been made among the refinery chemists of the Pure Oil Co. E. O. Sampson, of the Muskogee plant, has been transferred to the Marcus Hook refinery and I. L. Hostettler, resident chemist at Marcus Hook has come to Muskogee. Then Everett Gooch, of Muskogee, has been assigned to the refinery which the Pure is building at Toledo. And G. T. Yost, formerly resident chemist at the Marcus Hook plant, has been transferred to Muskogee as assistant superintendent, taking the place of H. L. Smith who is to occupy a similar position at Toledo.

* * *

L. B. McCammon, in charge of sales for the Marathon Oil Co., is leaving Tulsa and will live in Findlay, O., general offices of the Ohio Oil Co. The Marathon company is a grandchild of the Ohio, the line of descent being through the Mid-Kansas Oil & Gas Co. Mr. McCammon was a vice-president of the Transcontinental prior to its acquisition this year by the Ohio.

* * *

Four district superintendents of the Magnolia Petroleum Co. have exchanged places. A. H. Proctor, of the Laredo district went to the Cement district to succeed C. A. Hill, who was transferred to the district Mr. Proctor left. Lee Hudson, of the Healdton district and Harry Lamb of Burkburnett were the others who traded.

* * *

In reply to a recent letter by Ellick Botts concerning the ancient animals from which the Sinclair Refining Co.'s crude oil supply is asserted to have come, one Cirero Pipe adds his two-bits worth. His statement, not under oath, is as follows:

Bow Legges, Okla.
November 16, 1930

Mr. Ellick Botts,
Consulting Pumper,
Gray Horse, Oklahoma.

My Dear Mr. Botts:—

I have finally found, through your magazine, someone who is about as badly read as I am in regards to Proboscideans, Archeopteryxs, Eohippuses, Plesiosaures, Ichthyosauruses, Dinasaures, Brontosauruses, and

Tyrannosaurus Rexes. Now me and my assistant have been arguing this question time and again, and so we finally decided to take the question to the Local Proff, who teaches Geology at our most promising college here in Bow Legges. And believe me he told us enough things to make another Bob Riply out of anyone.

For instance the Proff says that these here dinasaures that happened to be roaming over the gloaming Tertiary rocks or grazing on the luxuriant Floras (which later on, maybe 3,000,000,000,000 years, to be a little more specific, was to make Pennsylvania the coal center of the world) really laid Eggs just like the barnyard fowl of today. That was too much for me, but he went on to prove it: He said that a scientist had gone down into some desert of India, Arabia or it might have been Venzuela and while digging around for a bone or two, found the eggs of a dinasaur laying in a little scooped-out place in the sand. Now how in the name of common sense could a dinasaur egg "mellow" that long with out getting completely *BAD?* It looks to me like it would have been used up long ago by some Pithecanthropus Erectus on a Prohibitionist or Bolshevik.

According to the Proff, the bill of fare in those hectic days was as confusing and perplexing as those we sometimes run across in some of our French Restaurants: Corn Eohippus and Calamites, Ammonites a la Pleistocene, crisp Sigilaria leaves with dressing, entelodont chops and other delicacies.

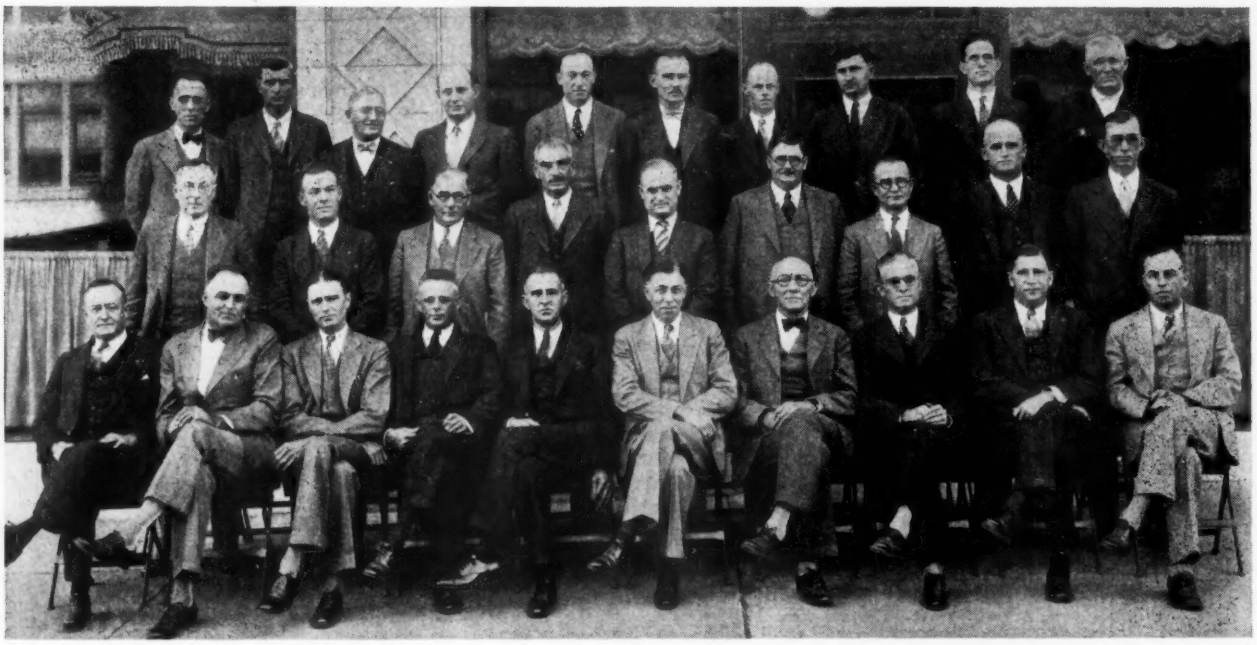
To get back to the content of your letter. I drew the conclusion from that letter that you did not believe that such monstrosities as the Dinasaures, Stegosauruses and Ichthyosauruses even existed, and if so how they could have developed into oil. According to my authority these monstrous animals and gigantic plants eventually died and their remains "decomposed into a hydro-carbonous mass," which in time was buried beneath thousands of tons of earth. Then another period of "decomposition" until after a billion or a trillion years we now have oil. (That about "decomposition" etcetera are the quoted words of the Proff, I wouldn't dare use them.) Hoping that this will set you straight on the subject of Animals, Oil, and Advertising, I remain as ever,—

Yours very truly,
(Signed) Cicero Pipe,
Bow Legges, Okla.

P. S.

I would suggest that if it is possible that you publish this letter in order to illuminate and otherwise mystify those interested in the subject of oil and advertising.

C. P.



Early in November field superintendents of the Empire Oil & Refining Co. held their annual conference in Bartlesville, Okla., general headquarters of the company. In the picture, left to right, they are:

Front row: N. H. Moore, division superintendent for south Texas, Houston; E. E. Ives, assistant division superintendent for Oklahoma, Bartlesville; D. D. Bodie, New Mexico division superintendent, Hobbs; C. S. Warren, Kansas division superintendent, Oil Hill; G. E. Goddard, north Texas division superintendent, Wichita Falls; Max Mahaffey, Panhandle division superintendent, Pampa; W. H. Betz, assistant superintendent for Kansas, Oil Hill; M. R. Shaffer, general superintendent, Bartlesville; J. E. Howell, assistant general superintendent, Bartlesville and C. E. Beecher, chief production engineer, Bartlesville.

Middle row: E. G. Brua, office manager oil division, Bartlesville; James Murray, district foreman, Madison, Kans.; W. F. St. Clair, district foreman, Okmulgee; W. G. McClune, district foreman, New Albany, Kans.; Harry Cousland, chief clerk, Oil Hill; S. P. Gates, district foreman for western Kansas, Oil Hill; Charles Galloup, district foreman, Oil Hill; C. P. Conover, district foreman, Seminole, Okla. and E. Dowse, district foreman, Burbank, Okla.

Top row: W. W. O'Neill, district foreman, Duncan, Okla; B. I. McClune, district foreman, Bartlesville; A. J. Leonard, construction foreman, Bartlesville; L. A. Ogden, production engineer, Bartlesville; F. A. Lawrence, district foreman, Wilbarger county, Tex.; J. A. Cleveriy, district foreman, Haverhill, Kans.; N. M. Hutchinson, production engineer, Oil Hill; Ray Hauber, production engineer, Bartlesville; Sam Harlan, production engineer, Bartlesville and Walter Williams, district foreman, Barnsdall, Okla.

Tightening of Proration Schedules Slows Drilling in Mid-Continent

TULSA, Nov. 29

THE past week in the Mid-Continent gave further evidence of the slowing down of drilling operations. New proration schedules and further curtailment of pipelines were the direct cause, though producers are becoming more chary about starting new wells or completing old ones under present price levels.

Pottawatomie County, Okla.

In the Sacred Heart area of Pottawatomie county, Okla., the discovery of last week has increased possibilities. This well, the No. 1 Crouch of the Robinson & Hicks Drilling Co., NW SW, 5-6-5E, has been flowing intermittently during its deeping. Though it has not yet reached the Wilcox sand, its present production indicates that a new pool is in the making. It is now producing about 185 barrels, eight per cent water, from the Simpson dolomite at a total depth of 4309.

The north Carr City area in Seminole county has a fourth well in the Pure Oil Co., No. 1 Tiger, SW NE SW 3-8-5E. In the Wilcox from 4142 to 4151, the well produced 3520 barrels on the gas lift. One location east of this well, Pine et al, No. 1 SE NW SW, 3-8-5E, is picking up production in the Hunton at 3895. It is this formation that is producing in the discovery well. Drilling is being continued however, in an effort to get into the Wilcox.

The Wewoka Townsite pool in this county is developing into a real hot spot. Several wells are about due in and though some of them are already conceded a poor chance because of the known faulted condition of the structure, others are logging well. There is every indication that the east half of the NE of 30-8-8E will be dry and it is thought that the trend of production will follow a narrow streak northwest of the original well.

Oklahoma City

The number of completions in the Oklahoma City pool may not have been as large as it has been in previous weeks, but the wells brought in make up for this deficiency in point of size. Outstanding initials, even for this great flush pool were registered on the west side in 10-11-3W. Of these, the No. 7 Holms of Hall & Briscoe, NE NW SE, is the largest as it flowed 4212 barrels in two hours. This is the fifth well to be brought in on this spectacular lease and it gives it a potential production of about 220,000 barrels. Two other wells are being drilled.

The Phillips Petroleum Co. has several wells in the north sand area that are about due in, though it has shut down 10 other operations. The latest completion of the company is the No. 1 King NE NE SW, 10-11-3W, which flowed 5410 barrels in two and one half hours. The pay was from 6346 to 6495.

Most of the whoopee is over at Oklahoma City, at least for the time being. The present drilling report reveals that there are now but 134 actual drilling operations. There were but three first reports during the past week and several of the majors are debating the advisability of making any in the future. Certainly the present conditions do not warrant the drilling expenditures especially when there seems no prospect for increased outlet.

The first of the year should see most of the activity over in this great pool unless a stimulant of unexpected origin comes to the fore. There are now 658 producing wells though the daily average number on production is about 70.

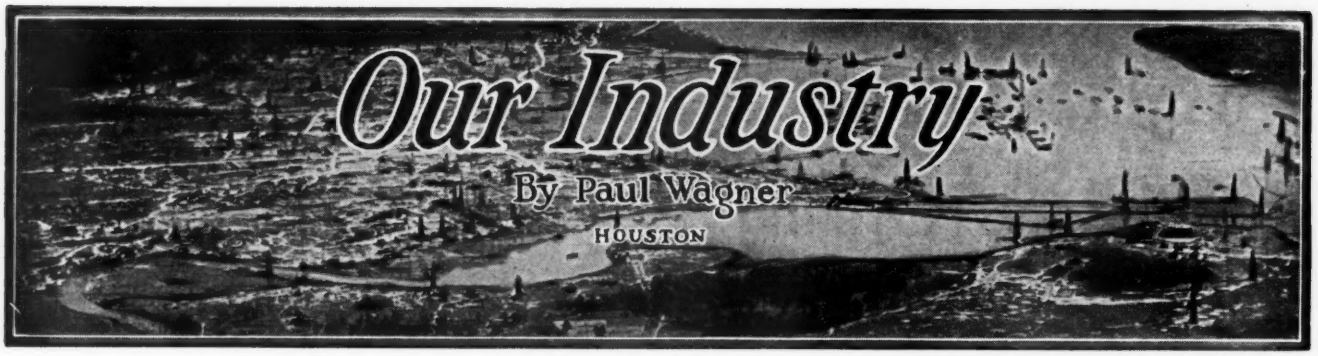
Kansas

Extending the Voshell pool of McPherson county, Kansas, one half mile to the south, the No. 1 Zerger of Noble et al, NW NE SE 16-21-3W, is estimated at 2000 barrels per day. The Wilcox was topped at 3412, first oil at 3420, and drilling was stopped at 3425 with 2150 feet of oil in the hole. The well is now shut down for tankage after having swabbed 190 barrels in three hours.

In the same county the Ritz pool has even a better well on the east side. This was the Texas Co., No. 5 Munn, NEc, 12-20-2W. The pay is in Chat from 2921 to 2962 and the well flowed at the rate of about 140 barrels per hour. This is somewhat better than the two outside wells of Palmer et al in 7-20-1W east of the pool.

Reno county had two dry reports in the Shell Petroleum Corp., No. 1, 11-25-5W, and the Braden-McClure No. 1, 6-22-4W. Both of these wells were drilled to nearly 4000 feet but without oil shows of consequence. Both are in the Wilcox and are standing full of water. A similar result was had by the well of the United Petroleum Co., in 29-21-9W, in Rice county. Here the Simpson was water bearing at 3492 and the hope of finding the pay of the Schurr pool is just about abandoned.

The Texas Panhandle was again consistently inconsistent in giving the Empire Oil & Gas Co. a dry hole in the neighborhood of its rich discovery in the Fields area of Carson county. This area created a real stir some months ago but has not had another producer since. The latest failure is the No. 1 Simms, 12-7-I & GN, which is D & A at 3590. Three gas wells and two other dry holes are practical offsets to the lone producer.



MARK D. WOOLERY, formerly general superintendent of the Ohio Oil Co., in California, has been appointed general manager of the Del Rey Oil & Refining Co., Ltd., with Los Angeles headquarters. Mr. Woolery has been in California about three years. Previously, he was in Rocky Mountain territory as field superintendent for the Ohio, prior to his transfer to the Pacific Coast.

* * *

Stanley C. Herold, recently of the Leland Stanford University staff at Palo Alto, has opened general geological and engineering offices in the Chapman building at Los Angeles. In addition to acting as engineering umpire for the Kettleman Hills district, under appointment by Secretary Wilbur of the Interior Department at Washington, Mr. Herold is widely known in technical circles. He is a member of the American Association of Petroleum Geologists and other technical organizations.

* * *

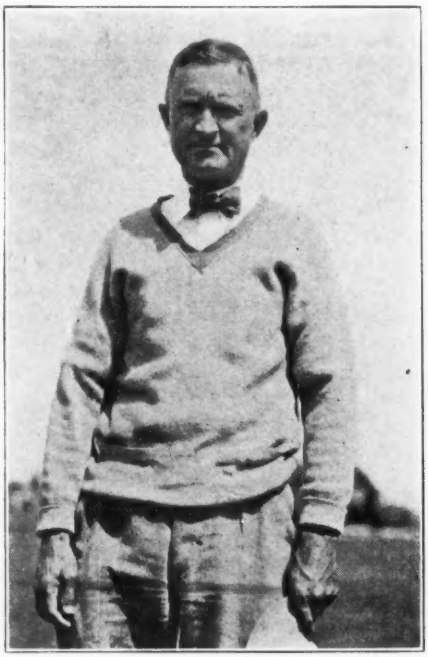
William Walker, for many years identified with General Petroleum Corp. of California, before it became a subsidiary of Standard Oil Co. of New York, has organized the Tideland Oil Co., Ltd., of which he is president. Associated with him are Capt. Frederick Libby, as vice president and general manager; Robert Burhans, Jr.; W. T. Bill; W. C. Resser; Charles Henebry; Milton A. Krug and S. C. Moran. Mr. Burhans is secretary-treasurer.

* * *

Walter Tschudin, vice president and manager of the Sinclair Mexican Companies, at Tampico, is "sporting" a new airplane. He made his first solo flight earlier in the present year and is now an adept at the stick.

* * *

Shifts in the field operating personnel of the Magnolia Petroleum Co., Dallas, have resulted in the transfer of A. H. Proctor from the Laredo, Texas district to the Cement, Okla., district; and C. A. Hill from Cement to the Laredo territory,



Mark D. Woolery

with Mirando City headquarters. Harry B. Lamb was transferred from the Burkburnett, Texas territory to the Healdton district at Wirt, Okla., and Lee Hudson went from Wirt to Burkburnett.

* * *

Frank Flynn, office manager of the Penn-Mex Fuel Co., at Tampico, has recovered from a severe attack of influenza.

* * *

Cresap P. Watson, vice president of the Mexican Seaboard Oil Co., with present headquarters at Los Angeles, made a business trip to Fort Worth after the American Petroleum Institute meeting in Chicago. Mr. Watson is on leave of absence from the Federal Royalties Co., of which he is president.

* * *

Governor-elect Ross S. Sterling, who several years ago quit the oil business for Houston town-building and Texas politics, after skippering the destinies of Humble Oil & Refining Co., in its earlier days, favors a substantial tax on pipelines transporting natural gas.

"We have a tax against oil production," he said, "and there is no reason why the same cannot be accomplished as to gas. . . . The bill could be so framed as to be of no burden to citizens or royalty owners. If the tax is placed on the gas at the well I am sure the pipelines could be forced to pay it."

Mr. Sterling expressed confidence that the legislature would be able to adopt a tax that would stick, although a vast amount of gas is piped into other states, as far north as Chicago, making its transportation an interstate transaction.

* * *

R. B. (Bob) Whitehead, chief geologist of the Atlantic Oil Producing Co., has been elected chairman of the Dallas Petroleum Geologists, succeeding H. B. Hill of the United States Bureau of Mines. Other new officers are G. B. Moody of the California Co., succeeding F. E. Kendrick of the Lone Star Gas Co., as vice chairman; Sam M. Aronson of Atlantic Oil Producing Co., secretary, succeeding T. K. Knox of the Texla Royalty Co.

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EDWARD VALVES

Weed Patch and Belridge Districts Expected to Be Large Producers

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Nov. 28 COMPLETION of a well in the Elwood tidelands of the coastal area, the anticipated completion of a second test of the deep sands at North Belridge in the lower San Joaquin Valley, and a substantial increase in daily yield from several Los Angeles Basin fields, featured California production news the past week.

On a pier approximately 2000 feet offshore from the mainland field at Elwood, Caroline Spaulding's Blue Goose 93-5 was completed late in the week for an initial flow of 9000 barrels during the first 24 hours. This is the fourth successful completion to be drilled in by Pacific Western Oil Co. which is developing the tideland permit for the private owner.

As is customary with new completions in the tideland portion of the Elwood structure the rate of flow from No. 93-5 is expected to increase considerably during the five-day open flow test. Recent completions on leases lying to the southeast built up the rate of flow to in excess of 13,000 barrels per day during these periods of unrestrained production.

A wildcat test of the tidelands near Elwood being drilled by the Bolsa Chica Oil Co. is shown below 3778 feet in a hard formation that it is hoped overlies a productive oil sand.

Except for this test, and three others in the proven tidelands activity in the Elwood field is practically at a standstill.

Interest in the west-side San Joaquin Valley field of North Belridge is once more acute as Richfield Oil Co. prepares for a production test on a flank well, Belridge No. 1. The hole had been reamed and 9⅝-inch casing was being run to about 5600 feet as the week closed.

With a good body of oil sand in evidence between this point and the bottom at 5804 feet and a strong gas pressure keeping the crew on the alert, experts look for the project to develop real production. Four high pressure and two low pressure traps have been installed to care for the anticipated yield.

More than half a dozen other projects are drilling at various depths within the immediate vicinity of Belridge Oil Co.'s No. 15, the discovery well of this play. During the week Shell Oil Co. obtained a permit to drill a well to be known as Core Hole D on Sec. 14, 28-30 in the North Belridge field.

Further to the south and east of the Belridge activity, Shell is deepening its Porter-Day No. 1, discovery well in the Weed Patch area, and is drilling ahead in its Porter No. 1, only a few hundred feet distant from the recent completion.

At present the interest in this particular section of "the Valley" is confined to Mohawk Petroleum Co.'s test on acreage said to have been taken over from Shell on a 50-50 basis. It is approximately a quarter of a mile east of the Porter-Day No. 1 and considered to be within the pay.

Mohawk's well is below 4600 feet and as the discovery project was completed with the bottom at 5910 feet, developments are expected to be rapid. Field experts predict that the Weed Patch pool will prove quite extensive. One engineer gave it an approximate area in excess of 2000 acres, a large part of which is held by Shell.

Since crude from this area runs about 21 gravity the development is not expected to be as active as in the North Belridge field where a 45 gravity oil is found in the deep sands.

Playa del Rey continued to be a source of worry to those engaged in the seemingly endless task of reducing California's actual daily production to the desired proration goal. Additional completions during the past seven-day period boosted the field peak to in excess of 43,000 barrels. The previously predicted peak of 50,000 or even 55,000 barrels may fall far short in the face of 90 drilling wells to say nothing of 40-odd rigs and locations.

From a total of 96 producing wells in this field, 61 in the upper zone yielded 28,956 barrels daily and 35 in the deep sand had a combined output of 14,451 barrels. There is an ever increasing number of idle and abandoned wells along the flank position because of either the failure of offset wells to obtain commercial production or the steady influx of water into the lower sands.

Daily production in the Long Beach field decreased 1790 barrels during the week when 1670 barrels of new oil from seven completions failed to stem the natural decline from producing wells. The yield was estimated at 97,209 barrels on Nov. 27.

Approximately 50 wells due for completion before Jan. 1, and 80 idle projects that might become active at any time, keep this one of the critical points in the curtailment scheme.

Showings from recent tests in the Los Cerritos district indicate that the oil sand is decidedly spotted. One well drilling for what is known as the Gem zone, found at about 7100 feet in a well 100 feet away, cored only gray sand although it went below 7300 feet. Fail-

ure to penetrate the pay zone was not due to a crooked hole as a survey showed the bottom was practically under the derrick floor.

With the utmost secrecy, two deep tests at Huntington Beach are reported to be drilling at critical depths. Officials of Superior Oil Co. one of the companies drilling a deep test profess ignorance of a report that oil sand had been cored below 7100 feet in well Fee No. 1. It is known the well is bottomed at 7311 feet, but actual showings still are an unknown quantity.

At this well and also at that of the other deepening jobs being run by the McCaslin interests, reported to be below 7000 feet, galvanized iron sheeting has been erected to keep out the wind and incidentally the inquiring eyes of curious spectators.

To Limit New Drilling In Elwood Field

LOS ANGELES, Nov. 28.—Making official announcement of an agreement known to be in effect for several weeks, R. A. Broomfield, president of the Barnsdall Oil Co., stated during the past week that immediately upon the completion of present drilling wells at Elwood no more will be started, except to care for offset obligations.

The statement commented on the fact that the present system of prorating was well enough in its way but that there is no provision to curtail drilling. It continued:

"Such intensified and unnecessary continuity of drilling operations tends to break the morale of the conservation movement and has a further tendency to bring about the very waste intended to be prevented. It is the opinion of the officials of the Barnsdall and Rio Grande oil companies that the real way to cut down overproduction is to cut down drilling, and this will be strictly adhered to by these companies in Elwood, as soon as our present wells are completed."

Engineering Features of Kettleman Hills Unit Plan Are Settled

LOS ANGELES, Nov. 28

ENGINEERING complications have been pretty well ironed out of the two-unit plan for future development of Kettleman Hills. It now rests with legal counsel for the various companies to draw up necessary by-laws to govern operators during the life of the plan, expected to be the life of the field.

Reports have it that the engineering committee established a figure of 21,200 acres as the possible productive area on the North Dome. Of this amount 8120 acres is considered somewhat doubtful, leaving 13,080 acres of actually proven production.

A large part of the doubtful acreage lies on the northwest plunge of the structure beyond Superior Oil Co.'s recent completion. This was done because engineers expect to find that the structure at this end flattens out in a manner similar to that found in the Los Cerritos area of the Long Beach field.

To facilitate the layman in understanding the complications introduced by this proven and semi-proven acreage the engineering committee has drawn up a map showing a structure within a structure. That portion of the structure including the proven acreage is drawn in red and that including the possible extension acreage in blue.

Land lying outside the proven area and yet within speaking distance of it is included between these two lines. Until such time as the doubtful acreage is proven productive it will participate on a 50 per cent basis. This development is expected to raise some complications since, under the development plan, exploitation of the flank positions would be delayed.

It is also reported that instead of having a standing committee of engineers, comprised of a representative from each interested company, the plan will provide for the appointment of only such engineers as are actually interested in any problem at hand.

James S. Bennett, legal counsel for the state, in asking for a preliminary injunction to restrain natural gas waste in the Kettleman Hills, Dec. 2, will ask that the injunction become effective Jan. 1. This respite is to allow operators time to make necessary repair on producing wells in order to reduce the gas waste, now estimated at above 500 million cubic feet daily.

May Consolidate Offices Of California Umpires

LOS ANGELES, Nov. 28.—Unification of proration control under one umpire may be undertaken in California in 1931. It is understood that such a plan will be considered by the operators' advisory committee at an early meeting.

At present there are two umpires with separate offices, H. P. Grimm at Los Angeles and Neil Anderson at Long Beach.

Current output on the West Coast is 67,000 barrels above the 540,000-barrel goal. Uncurtailed production of Playa del Rey is responsible for about 40,000 barrels of this.

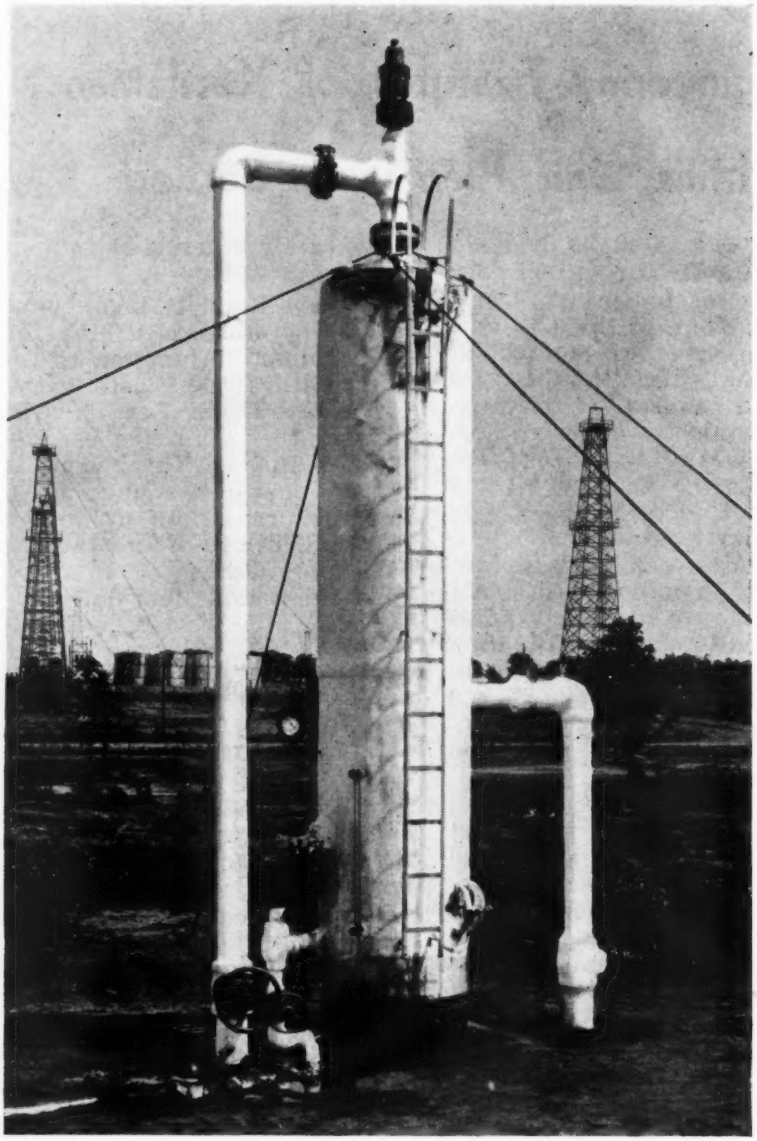
Home for Old-Timers Proposed

TULSA, Nov. 29.—Directors of the International Petroleum Expostion have authorized William B. Way, general manager, to collect data and formulate a plan looking to the establishment of a home for Old-Timers—aged and indigent men who have been faithful pioneers in the building of a great industry and who now require assistance.

Mr. Way will give this his close attention for the next few months. With the next Exposition so far away—May, 1932—he will be able to make a comprehensive study of the needs of the Old-Timers. He will start this survey at once.

OIL a

By William F. Lowe
N. P. N. STAFF WRITER



High pressure separator on one of the "Ice cream" wells at Oklahoma City. Note the heavy coating of frost on the sides and fittings. The outdoor temperature at the time the photo was taken was 103 degrees

TULSA

ON THE pressures, hook-up, and the number used, depends the successful operation of oil and gas separators. For the most part these are generally recognized factors, but it is seldom that all three are given sufficient consideration. Detailed observation in great flush areas shows that at least one of these prime requisites has been disregarded entirely, or greatly underestimated. The number of such instances is surprisingly large.

The function of an oil and gas separator is exactly what its name implies. It is supposed to separate the gas from the oil as both are delivered from a flowing well. The higher the percentage of separation, the less will be the losses so far as waste into the atmosphere is concerned. To illustrate this point, the casinghead plant to which the separated gas is sent is equipped to remove the gasoline content of the gas. The gas and gasoline so delivered is turned to good account and the major part of it is saved.

If on the other hand, improper separation results in the sending of large quantities of gas over into the tanks with the oil, there is bound to be considerable waste. Most of this loss will be at the expense of the crude oil purchaser for he has no way of retaining or extracting the excess lighter gasoline fractions in the oil. In delivering the crude from the lease tanks to his refinery it passes through several temperature changes and is subject to considerable agitation. A drop in gravity of from one to two degrees often may result.

The producer, however, may prefer a smaller degree of separation in order that certain of the lighter fractions will be carried over into the stock tanks. Ordinarily this practice will lead to a slightly higher gravity crude and raise it one bracket in the price range. It is a possibility but is not always true, for a large differential pressure between the separator and the tanks, agitation and temperature changes, may bring the reverse. On the whole, the industry would be subject to less waste if the gasoline plant received the richer gas.

The above statements are based on the consideration of three distinct products that are subject to separation. These are: liquid crude; gas containing gasoline vapors recoverable only by processing through a plant; and an intermediate lighter fraction of crude which exists as a liquid, or a gas, depending on the amount of pressure on the trap, and the amount of agitation. To leave the latter in the gas going to the gasoline plant, it is necessary for the trap to operate at as low a pressure as possible.

As the operating pressure on a trap is increased, more and more of the lighter fractions stay in a liquid form, and the oil absorbs a growing amount of gas in a gaseous state. The result is that a leaner gas goes to the gasoline plant, while the lighter fractions of gasoline that are condensed in the oil,

L and GAS SEPARATORS

Successful Operation Depends on Co-ordination of Several Factors--Generally Recognized but Often Disregarded or Greatly Underestimated

and the gas in solution, leave the trap under pressure. At the tank battery this pressure is removed, and the boiling off process which follows liberates a certain amount of both. This action is considerably aided by the usually warmer temperature of the tanks.

It is possible for the producer to defeat his purpose of gravity raising by forcing too much gas over into the stock tanks. The desired result is a temporary one, for the excess gas coming out of solution carries with it a large amount of the lighter gasoline fractions. This is particularly true if there is much agitation in the tanks. By the use of a higher pressure on the trap the producer has sent a leaner gas to the plant but his savings are partially lost when the pressure is released in the tanks.

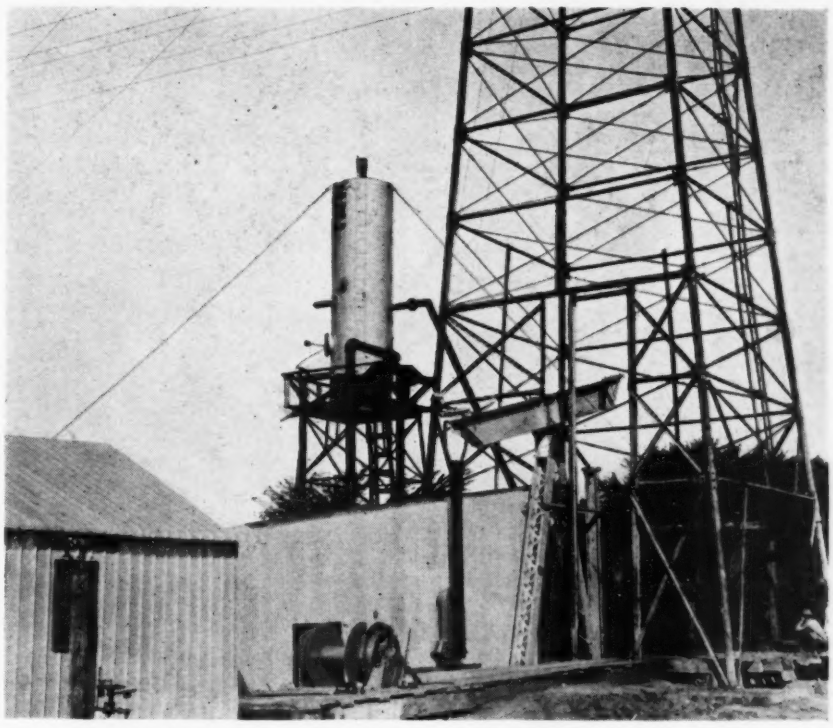
In hooking up a trap, the general tendency is to use gas vent and discharge lines of insufficient size. If the former is too small to handle the volume of gas coming from the well, the pressure on the trap cannot be properly relieved, and the conditions as outlined above will be the result.

If the oil discharge line is too small, the oil backs up on the trap and considerable amounts of it will be blown out through the gas vent lines into the air, or delivered to the casinghead plant. Protests on this score to the producer are made so often that the large estimate on the number of improperly connected traps seems warranted. Wells that flow by heads may bring about the same condition.

There are a number of factors which aid in determining the size of oil discharge lines. Of these, the distance between the tank battery and the well is not the least. In a large number of cases this line is too small in comparison to its length. For every additional foot the oil has to travel, and for every change in direction, there is an added resistance to flow. The result is that the back pressure on the trap is increased, thus hampering its proper operation. Oklahoma City may be said to be an exception to this, for the wells are usually so large that ample provision has been made to care for their flow.

The only apparent reason for the installation of too small gas vent and oil discharge lines, by operators in general, is one of economy. In this they are "penny wise and pound foolish" for they lose either oil into the air, or rich vapors from their tanks. Both are major losses, and if avoided by the use of larger lines, would more than compensate for their additional cost.

The cost of hooking up a trap is not excessive and its rate of depreciation is fairly low. Operators would be dollars ahead in many instances if they would use more, or larger, traps if the well so required. With either installation, the larger single or the double hook-up, the operating pressure, would be lower and a better degree of separation would be obtained. Separator manufacturers seem inclued to rate the efficiency of separation of their products at the maximum. This is all very well, but it would be better for the producer if he operated them considerably below this rating. More often than not he will obtain a higher degree of separation. As a trap approaches its rated capacity it becomes necessary to use pressure to "make it separate." The result is that the density of the



Elevated separator hook-up on a well in the Oklahoma City field. Note the height to which it is raised and the size of the flowline

gas is changed, and though good separation is accomplished the pressure forces a more gaseous solution over into the tank battery.

Much of the pressure on small wells may be relieved by the elevation of the trap. The height should be sufficient to allow the oil to flow by gravity to the tanks, thus permitting the trap to operate at atmospheric pressure. It is possible by this method to even put a few inches of vacuum on the trap.

Vacuum is not necessary and is sometimes inadvisable. If a company is operating both the gasoline plant and the wells, it is a good move, for a stabilized crude can be put into the tanks and all the gasoline can be taken from the gas. On the other hand, to the owner who is strictly a producer, vacuum pulls the lighter fractions into the tanks where there is more than an even chance of their being lost.

Another practice which is becoming more and more common where two separators are used, is to elevate one of them at the tank battery. The oil from the trap at the well is put through this one at a very low pressure. Thus the gas and lighter gasoline fractions, which might otherwise have been liberated in the tanks, are taken out in the second trap and delivered through a low pressure line to the gasoline plant.

There is considerable discussion over the advisability of putting a mist extractor inside a trap, as many manufacturers are now doing. One of the arguments presented is that a mist extractor is built to handle a more or less specific amount of gas, and that any appreciable change in volume either way prevents it from functioning properly. Since an operator has no way of telling ahead of time how much gas a well is going to make, the enclosed extractor seems a rather arbitrary arrangement. It is contended by some that the logical place for a mist extractor is on the gas vent line. Here, the amount of gas going to it can be regulated to fit its capacity, and liquids escaping from the trap can be recovered.

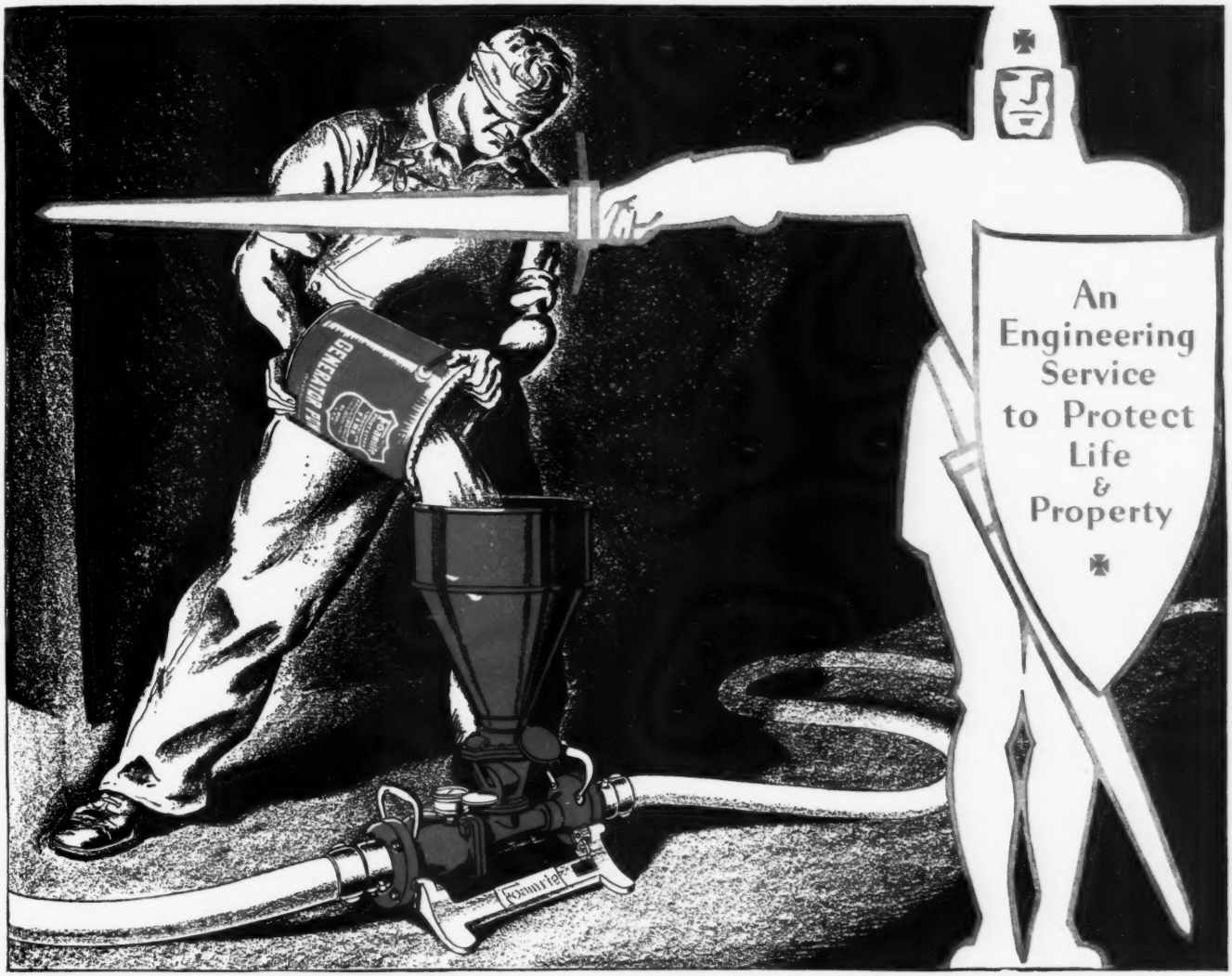
Mist extractors are made to care for the unusual conditions in a well. This does not mean, however, that all wells should be equipped with them. They can often be used to greater advantage when serving a group of wells. This could be done by placing one or more on a lease gathering line near the gasoline plant. Under ordinary conditions they may not be needed at all if the separator is working below its rated capacity. In the event that a higher pressure is required on the trap in order that it be held below its rating, some assert that another trap is needed rather than a mist extractor.

Applied to the extra devices that may be placed in the upper portion of a trap, the term mist extractor, or mist trap, seems to be a misnomer. It is quite probable that a further degree of separation is obtained by the use of these mechanical additions, but the term applies equally as well to the trap itself.

Underwood & Underwood

General view of the great new oil fields of Horodyncre and Boryslaw in Galica—said to be one of the richest fields in Europe

FIRE — AN INCIDENT OR A DISASTER ?



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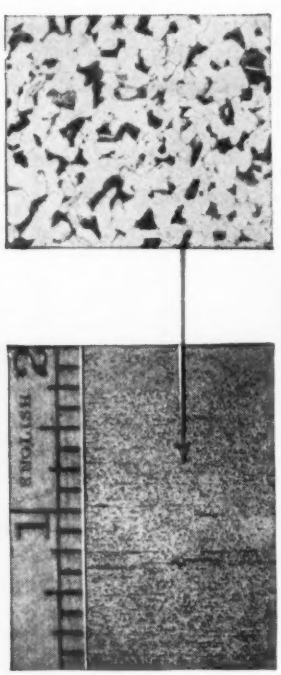
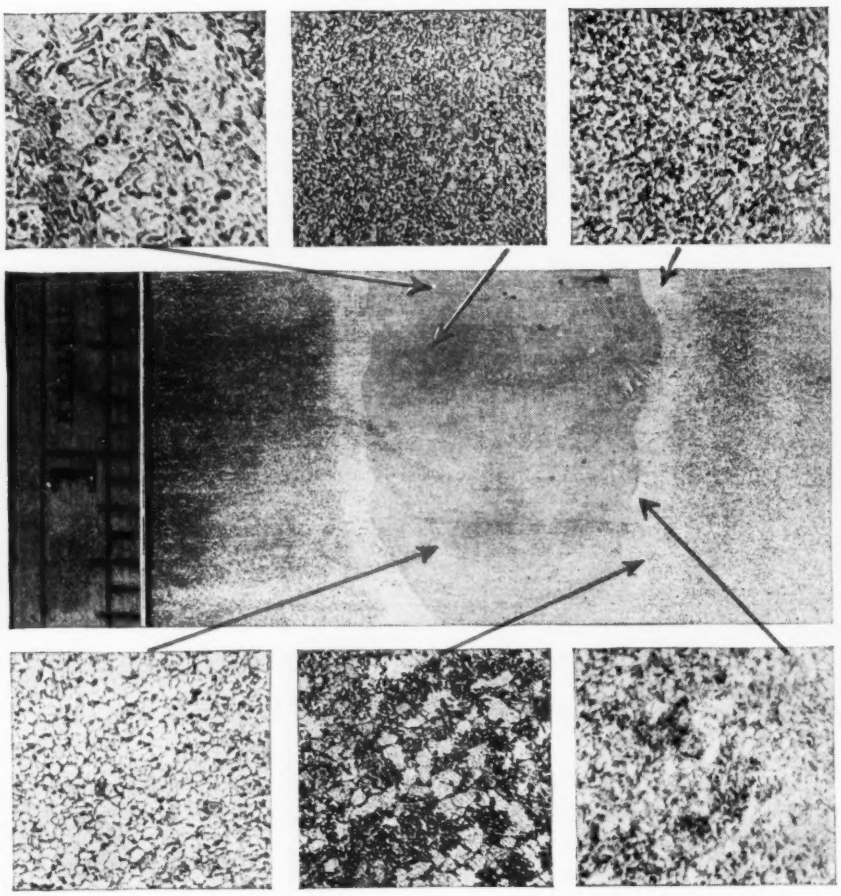
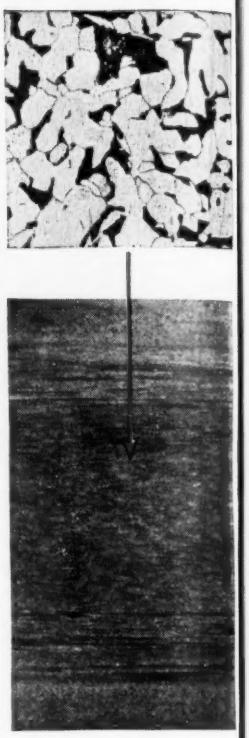


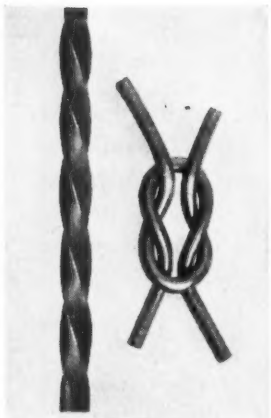
Above: Class A Seamless cylinder material. Minimum tensile strength 60,000 lbs.; yield point 35,000 lbs.; elongation in 2 in. 26%; reduction of area 42%. Specimen etched 40 minutes in hot 1 to 1 hydrochloric acid. Micrograph {top} shows uniformly dense structure. It required 40 minutes of etching to bring out lines in the seamless cylinder material.



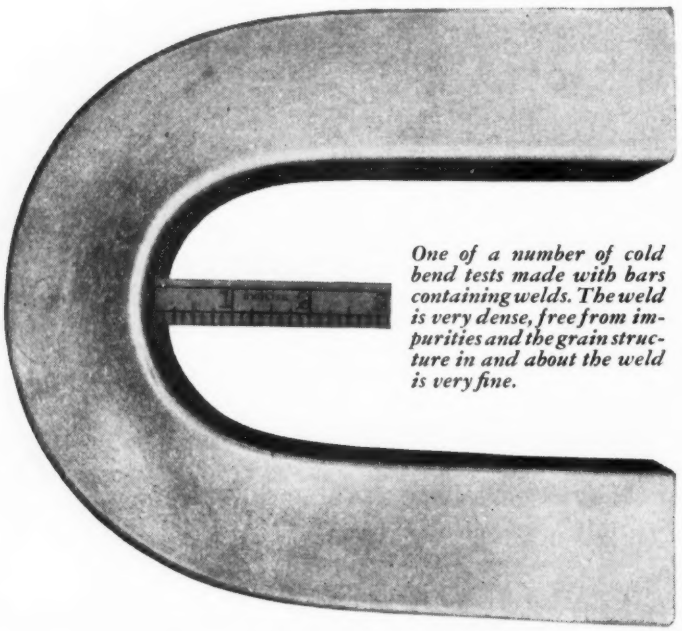
Above: The weld in seamless rolled steel, and six micrographs showing the fine grain structure and unusually clean metal in and about the weld.



Above: Special 50% discard welding quality plate material. Minimum tensile strength 55,000 lbs.; yield point 27,500 lbs.; elongation in 8 in. 25%. Specimen etched 20 minutes in hot 1 to 1 hydrochloric acid. Micrograph {top} shows grain structure. Compare deeper lines with those in rolled steel {extreme left} which was etched 40 minutes.



Above: Ductility tests made with weld metal, a ⅜" round specimen tied into a knot cold, and a ⅝" sq. bar that was twisted cold 450 degrees without showing any signs of distress.



One of a number of cold bend tests made with bars containing welds. The weld is very dense, free from impurities and the grain structure in and about the weld is very fine.

Above: Test bar of weld metal, showing remarkable ductility and a perfect fracture. Tensile strength 67,090 lbs.; yield point 58,090 lbs.; elongation in 1.5 inches, 33.3%; reduction of area 63.5%.

fusion welded construction

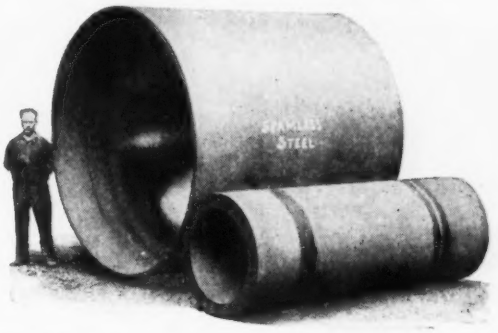
demonstrates . . .

superior tensile strength ductility and density

IN KELLOGG'S electric fusion welding, all variables are automatically controlled. Welds made either in Kellogg seamless cylinders or plate have the full strength of the base metal. A perfect joint is obtained. Both deposited metal and base metal adjacent to the weld have unusual tensile strength, ductility and density. For example, Kellogg all-weld metal is guaranteed to the following minimums:

Tensile strength 60,000 lbs. per sq. inch; yield point 40,000 lbs. per sq. inch; elongation in 2 inches, 20%; reduction of area, 30%.

To the Kellogg fusion welding process, Kellogg rolled seamless cylinders bring a uniformly dense steel that is perfectly adapted. Before being rolled, cropping, piercing and cropping operations remove the highly segregated areas



Ingot and a finished rolled cylinder. Sizes of pressure vessels fabricated from these cylinders are limited only by transportation facilities.

from the ingots. Joined by Kellogg fusion welding, these cylinders form a pressure vessel free from longitudinal seams, with fibres running circumferentially, and having the "skin" of rolled steel that is unusually resistant to corrosion.

The complete story of Kellogg seamless cylinder fusion welded pressure vessel construction, with all metallurgical tests illustrated, is contained in a new brochure. Let us send you a copy.

The M. W. KELLOGG COMPANY

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High Anti-Knock Gasoline From Hydrogenation

CLEVELAND REFINERS are especially interested in the announcement made by Dr. R. T. Haslam, in charge of hydrogenation for the Standard Oil Co. of New Jersey, in the paper by himself and R. P. Russell presented at the American Petroleum Institute meeting in Chicago, Nov. 13, that high anti-knock motor fuels may be made by hydrogenation of heavy petroleum stocks.

This new development in hydrogenation had not been discussed in papers previously presented by these authors, and is the outstanding feature of the paper. The remainder of the discussion dealt chiefly with developments which have been announced in papers before the American Chemical Society and the National Petroleum Association in September. The latter article was published in NATIONAL PETROLEUM NEWS for Oct. 1, 1930, page 58.

According to the statements made by Dr. Haslam, a yield of 90 per cent or more of motor fuel with an anti-knock value of 80 per cent iso-octane in normal heptane is obtained from Mid-Continent gas oil. This has been accomplished from an operation which first made a high gravity burning oil, by merely changing the conditions of hydrogenation, and without shutting down the unit orginally producing the burning oil. This yield, according to the authors, is appreciably better than that from cracking the same stock in a high-pressure cracking process, which yielded only 19 per cent of a naphtha of 64 per cent iso-octane equivalent.

Because of the widespread interest in the hydrogenation process and the results obtained therefrom, the text of the paper dealing with high anti-knock motor fuel production is carried in full below.

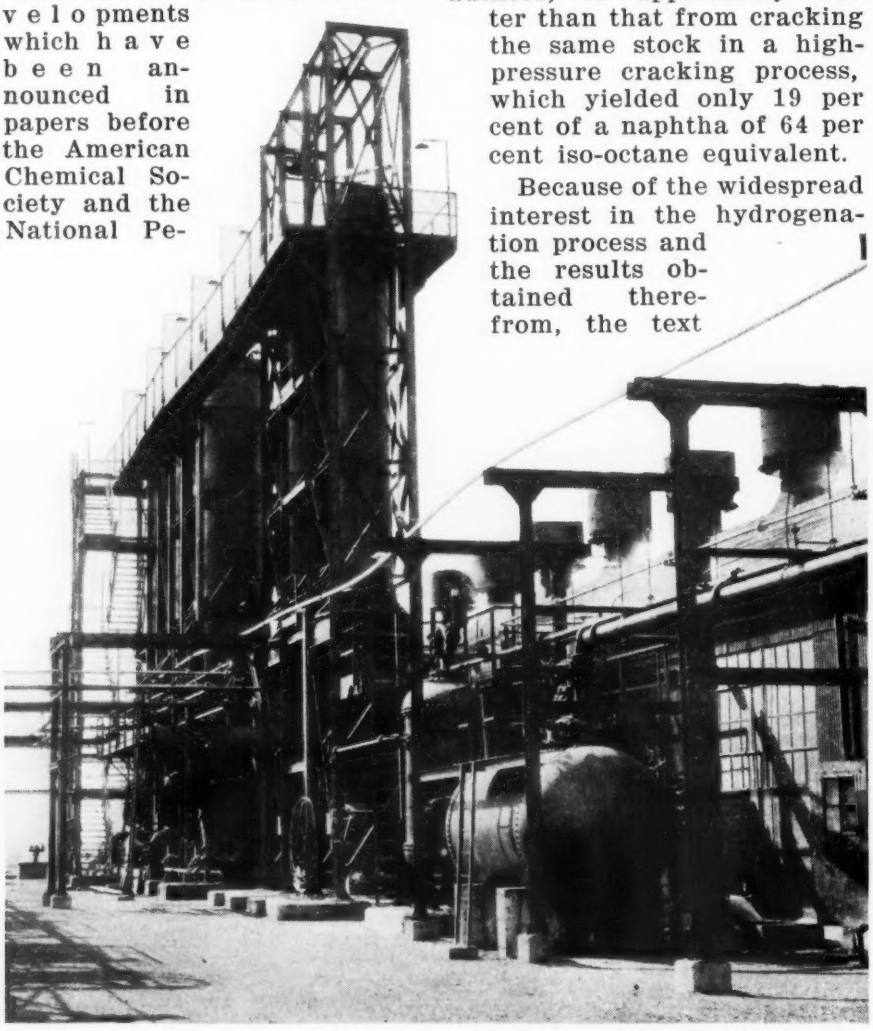

Fig. 2—Scrubbing Towers at Hydrogenation Plant

Production of Stable Anti-Knock Gasolines

In converting a fuel oil into gasoline and gas oil, or in upgrading a lubricating oil or refined-oil distillate, hydrogen is added to materials naturally deficient in this respect. For example, during a run on the hydrogenation pilot plant at Baton Rouge, using a Mid-Continent gas oil as charging stock, the first product made was a paraffinic burning oil of high gravity (e. g., 46.7 deg. A.P.I.); without stopping operation, and merely by changing the conditions, the same charging stock yielded over 90 per cent of a stable, low-sulfur gasoline having the same knocking tendency as 80 per cent of iso-octane in n-heptane.

It will be recalled that in those adaptations of hydrogenation described earlier, the volumetric yield is 100 per cent or more. This is not always the case in producing anti-knock gasoline from gas oil. Unless the knocking tendency and the fill is immaterial, the yield of gasoline is somewhat less than 100 per cent, although usually better than 85 per cent. In making anti-knock gasoline by hydrogenation, however, no tar or coke is formed and only two products are obtained— gasoline and gas.

Any material not converted into gasoline in the first pass through the system is recycled. The gasolines produced thus far have been practically sulfur-free, pass doctor and corrosion after lye-washing, and are quite gum-stable. In a few cases, some light treating has been necessary, but this has been very small in amount.

As an example of this type of operation showing the effect of the hydrogenation process, a 15 per cent cut taken overhead from a 14 gravity cracking-

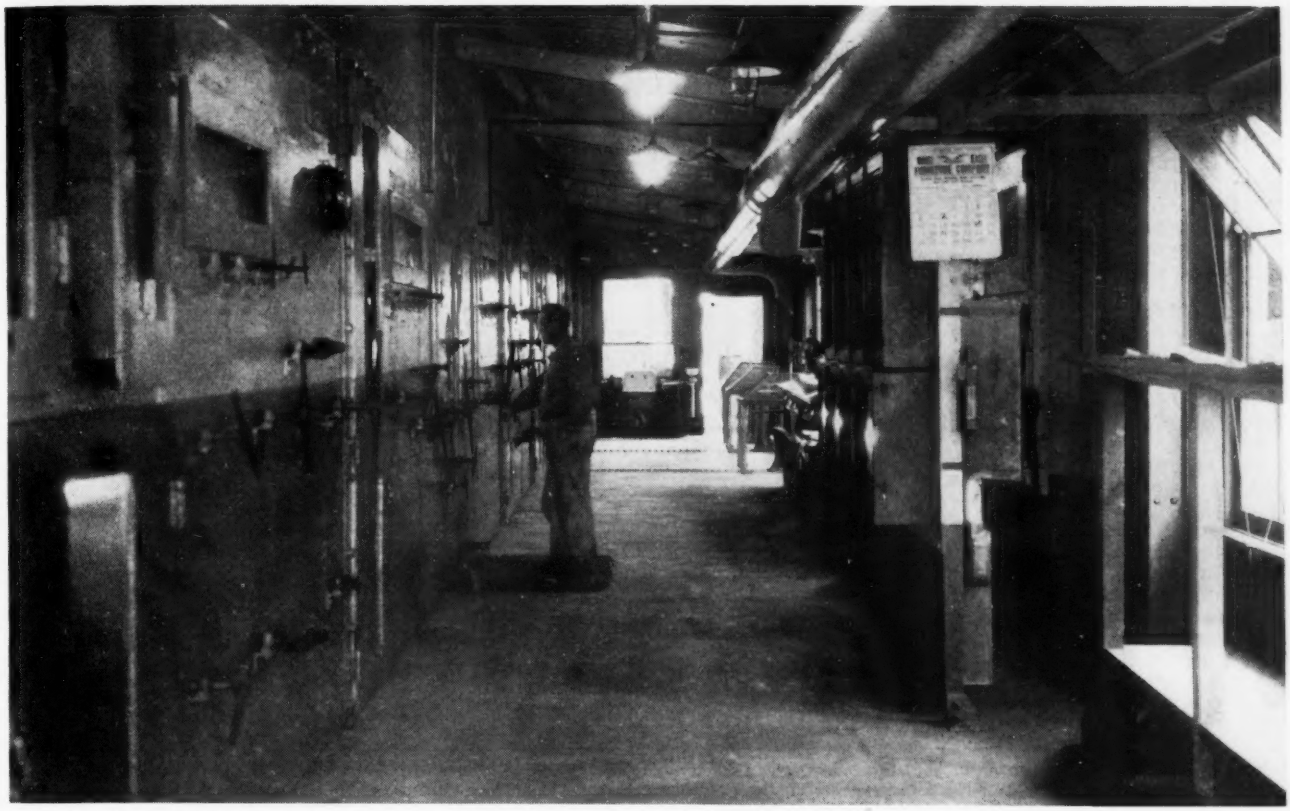

Fig. 1—Operating Panel In Hydrogenation Plant, Bayonne, Showing Heavy Concrete Wall Between Operator and High-Pressure Reaction Chambers

plant tar has yielded 85 per cent (not including a considerable quantity of recoverable light ends) of stable gasoline having a knocking tendency equivalent to 85 per cent of iso-octane in n-heptane. The interesting feature is that this charging stock, when cracked in an efficient high-pressure cracking process, yielded only 19 per cent of unfinished naphtha (having an anti-knock value of 64 per cent iso-octane in n-heptane) and 67 per cent of unmerchantable tar, the balance being gas and coke. In other words, the charging stock to the hydrogenation unit in this case had the value of fuel oil plus distillation, and the product was worth premium-grade gasoline value.

Additional results obtained by this method of operation are given in Table 1, showing yields and quality of product obtained by: 1, cracking, and 2, hydrogenating several feed stocks. The following points will be noted:

1. For both cracking and hydrogenation better anti-knock gasolines are obtained with more favorable stocks.

2. The most striking difference between cracking and hydrogenation appears to be not only the much greater yields, but also the much better anti-knock value obtained by hydrogenation. It is also interesting that although the less paraffinic stocks give lower gasoline yields by cracking, this factor makes no apparent difference in hydrogenation, the so-called refractory stocks giving as high yields as the more readily cracked, high aniline point gas oils.

3. The anti-knock value and yields of gasolines made by cracking are based on the unfinished naphthas. Final yields may be expected to decrease, therefore, and the anti-knock value to become poorer as the gasoline is finished. In the case of the gasolines made by hydrogenation, the product leaving the unit requires no treatment (or very little), so the yields and knock ratings are representative of plant operation. It is interesting that in most cases where treatment of hydro anti-knock gasoline has been necessary, the anti-knock value has been improved somewhat thereby. Furthermore, although the anti-knock values in Table 3 are correct for those cases where the per cent of iso-octane in n-heptane is less than 75 per cent, they are probably low by from about 0.5 to 1.5 per cent for the more highly anti-knock gasolines. The knock-rating spread, therefore, is even more in favor of the hydrogenated products than indicated.

4. The yield of hydrogenated gasoline appears to be practically independent of end points of the gasoline, e. g., 89.9 per cent and 89.5 per cent yield for 420 deg. F. and 336 deg. F. end-point gasolines. This in general does not hold true for cracking plants.

5. A further interesting feature of the hydro gasolines made by the hydrogenation operation, shows the anti-knock characteristics of both hydrogenated gasoline and straight run Mid-Continent gasoline as a function of the boiling points of their different fractions. In the straight run Mid-Continent gasoline, the anti-knock value for the lighter fractions is better than for the heavier fractions.

In the case of the hydrogenated gasoline, however, although the anti-knock value of the low boiling point fractions is better than that of the fractions of me-

Table 1

Comparison of Yields and Quality of Products by Hydrogenation and by Cracking

Feed Stock	Mid Continent Gas Oil				West Texas Cycle Gas Oil				
A. P. I. gravity	35.6		37.4			30.3			
Initial boiling point, deg. F.	414		474			400			
Percentage over at 460 deg. F.	.....		2.5			56.0			
Percentage over at 550 deg. F.	.....		89.0			.....			
Percentage over at 595 deg. F.	80		.....			.....			
End point, deg. F.	.....		618			612			
Sulfur, per cent	.....		0.153			0.192			
Aniline point, deg. F.	165		162			102			
Products	**Cracking**		**Hydrogenation**		**Cracking**	**Hydrogenation**			
	(1)	(2)	(1)	(2)		(1)	(2)	(3)	(4)
Gasoline yield—per cent by volume	52.3	59.0	89.9	89.5	40.2	94.5	89.6	94.8	92.0
Gravity, deg. A. P. I.	59.6	.....	55.4	62.8	51.0	39.8	38.6	47.8	58.4
Initial boiling point, deg. F.	98.0	.....	95.0	87.0	104.0	110.0	98.0	98.0	96.0
Percentage over at 212 deg. F.	31.5	.....	35.0	42.0	25.0	13.5	16.0	25.0	33.5
Percentage over at 284 deg. F.	55.0	.....	54.0	76.0	46.0	25.0	28.5	42.0	72.0
Percentage over at 356 deg. F.	.....	.....	72.0	.....	.....	.....	45.0	67.0	.....
Percentage over at 374 deg. F.	79.5	.....	79.0	.....	76.0	50.5	53.0	76.0	.....
Percentage over at 400 deg. F.	.....	.....	87.0	.....	88.0	70.5	71.0	.....	.....
End point, deg. F.	406.0	.....	428.0	336.0	436.0	436.0	436.0	403.0	330.0
Anti-knock value as per cent iso-octane in n-heptane	68.0	.....	72.6	80.0	79.0	82.2	85.0	82.76	82.8
Sulfur, per cent	.....	.....	0.013	0.025	.....	0.005	0.005	0.006	0.022
Gas formation, per cent	11.8	16.6	18.0	17.8	13.0	19.0	20.4	18.8	19.5
Tar formation, per cent	18.7	23.7	0.0	0.0	21.9	0.0	0.0	0.0	0.0
Cycle gas oil, per cent	17.2	0.0	0.0	0.0	24.9	0.0	0.0	0.0	0.0

"Note:—Column 2 under 'Cracking,' Mid-Continent gas oil shows estimated yields when no cycle gas oil is withdrawn. Experience indicates that the West Texas cycle gas oil would give about 45 per cent naphtha yield when no cycle gas oil is withdrawn."

dium boiling point, the anti-knock characteristics of the high boiling point fractions are much better than for the low boiling material.

6. The possibility of reducing by-product fuel oil production by means of this application of hydrogenation is readily apparent, since no tar is produced in the hydro operation.

Reducing fuel oil production by hydrogenation is susceptible of numerous variations, some of the most interesting involving

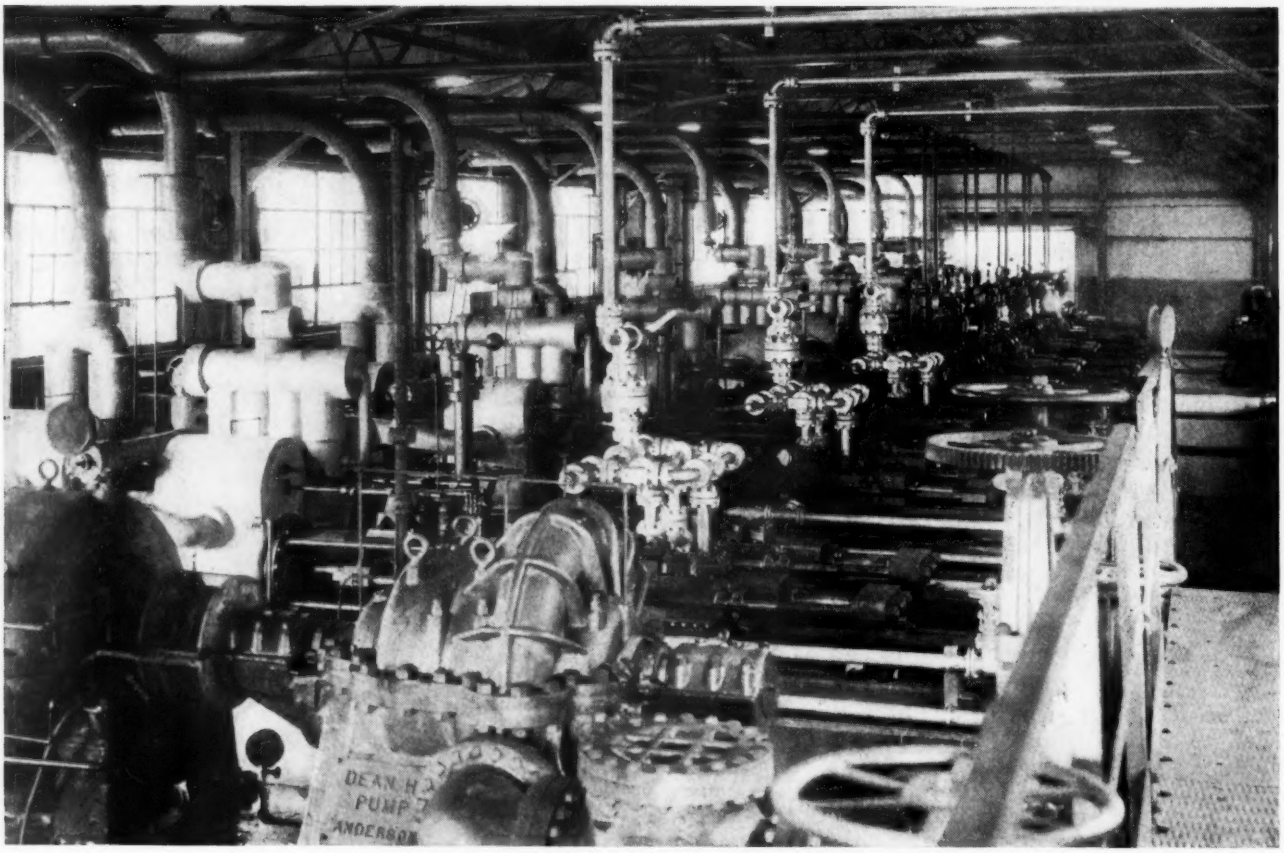

Fig. 3—Interior Of Pump House, Hydrogenation Unit

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the use of cycle gas oils from cracking plants in hydro units. Although these cycle gas oils may be re-cracked, they have a low conversion per pass, and give low gasoline and high tar yields,* resulting in increased cracking costs.

In fact, it has been estimated that the last 10 to 20 per cent of the gasoline produced by cracking (i. e., the portion resulting from these cycle gas oils) costs nearly half again as much as that portion of the gasoline coming directly from the virgin cracking stocks. The same cycle gas oils are, however, not at all undesirable for treatment by hydrogenation, and in fact give high yields of highly anti-knock gasoline (see Table 3).

By recycling less heavily in cracking plants, treating cycle gas oil in a hydro unit, the knocking tendency of the total refinery gasoline is improved, and fuel oil production is decreased. It seems probable that cracking is often carried further today than is economically justified, and that for high gasoline yields almost any combination of the cracking with hydrogenation would be cheaper than cracking alone. The most desirable combination of the two processes of course depends upon local conditions.

Table 2 shows how combinations of cracking and hydrogenation of cycle gas oils work out on a virgin Mid-Continent charging stock. Thus the fuel oil production may vary from 0 barrel per 100 barrels of gasoline for the full hydrogenation operation to 43 barrels of fuel oil per 100 barrels of gasoline for straight cracking. The average knock rating is worst for straight cracking, and is about the same for the varying combinations of hydro and cracking shown.

*Sydnor and Patterson, "Cracking Value of Straight-Run and Cycle Gas Oil," *Ind. Eng. Chem.*, 22, 1227, Nov, 1930.

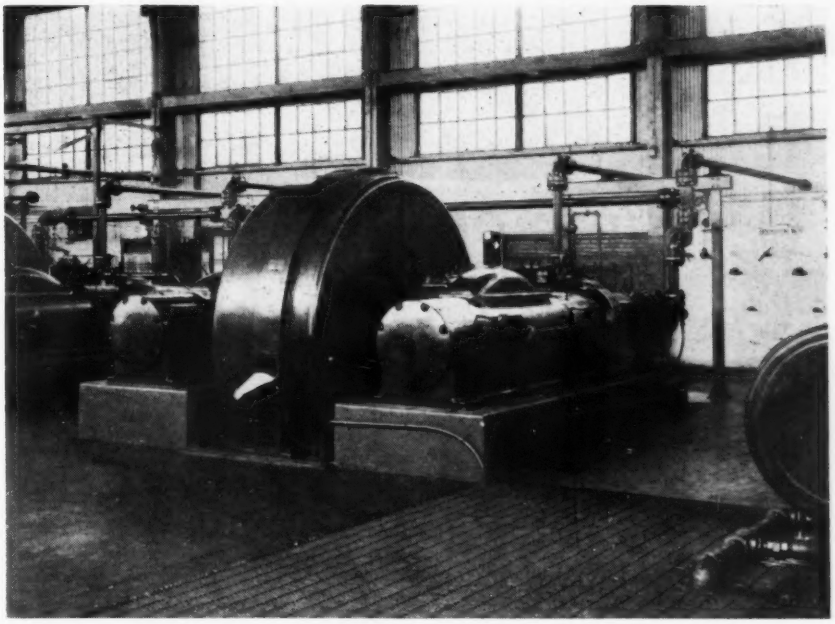


Fig. 4—Ingersoll-Rand High-Pressure Booster Compressor, Feeding Hydrogen To Heating Coils

General Considerations

The technical difficulties of hydrogenation are offset by the following factors:

1. Flexibility of the process and equipment.

2. The process usually accomplishes in one treatment the equivalent of two or more alternative refining operations, for example, a, production of the anti-knock naphtha from gas oil, and, b, treating. Therefore, it is necessary to consider as the over-all accomplishment not only the production of anti-knock gasoline, but also the fact that the equipment required and the cost and losses of finishing have been materially reduced.

3. With hydrogenation it is possible to produce products of the desired quality from a very wide range of crudes.

4. There are especially advantageous possibilities in combining once-through cracking with hydrogenation of the cracked gas oils.

5. Hydrogenation appears to raise materially the economic upper limit to the anti-knock value of gasoline producible from petroleum. This will undoubtedly have a marked effect in the future on the design of automotive and aviation motors which, in turn, will react on the petroleum industry. A similar mutual action has been wit-

Table 2

Combinations of Cracking and Hydrogenation as Affecting Gasoline Knock Rating and Refinery Fuel Oil Production

Case*	Bbl. Gasoline by Cracking	Bbl. Gasoline by Hydrogenation	Bbl. Gasoline per 100 Bbl. Gas Oil	Anti-Knock† Value of Hydro Gasoline	Anti-Knock† Value of Average Gasoline	Tar Per 100 Bbl. Cracked Gasoline	Tar Per 100 Bbl. Total Gasoline
1	0	90	90	74.0	74.0	0.0	0.0
2	23	57	80	78.6	74.0	19.0	5.5
3	34	38	72	81.4	74.0	26.8	12.8
4	41	25	66	87.5	74.0	30.7	19.1
5	45	17	62	90.6	74.0	36.0	26.2
6	54	0	54	63.5‡	63.5	43.0	43.0

*Case 2 represents once-through cracking, all the cycle gas oil being sent to hydro units.
Cases 3, 4, and 5 represent various and increasing degrees of recycling.
Case 6 shows the ultimate yield of gasoline as produced by complete recycling of cycle gas oil in the cracking unit.
†As per cent iso-octane in n-heptane.
‡Anti-knock value of finished cracked distillate. Also note yield and anti-knock value of cracked gasoline. Higher yields can be obtained from this same feed stock, but only by sacrificing anti-knock value or end-point or both, or when withdrawing a lower gravity tar (12.0 deg. or 13 deg. A.P.I. in above).

Busy crude stills drown market with wrong kind of gasoline—

The flood of crude oil pumped to the topping stills has flowed out in streams of gasoline and rivers of fuel oil on the market

That's what's the matter There's too much straight run gasoline Most of it is the wrong kind because it knocks

There's too much fuel oil—much too much

Both angles of this situation can be corrected

Run less crude oil to the skimming stills and run more fuel oil to Dubbs cracking units

Dubbs isn't limited to fuel oil—it will crack anything—gas oil, kerosene distillate, slops—but fuel oil is the cheapest charging stock right now—other markets for it are shot

Fuel oil is ready money if you have a Dubbs plant

Make more gasoline from fuel oil; buy less crude Better gasoline at lower cost—that's the way out of the woods

You can even make straight run gasoline respectable if you blend enough Dubbs cracked gasoline with it

Cracking more fuel oil will, of course, stiffen the fuel oil market by reducing the supply

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

nessed in the past seven years through the use of tetra-ethyl lead which first made possible the production of high compression motors, and in turn caused the oil industry to improve progressively not only the anti-knock value of its premium gasolines but its non-premium competitive grades as well.

3500-Barrel Tube Still Added To Sunray Oil Corp. Plant

TULSA

TO BRING its refining capacity into better alignment with its production, Sunray Oil Corp. is adding a 3500-barrel Southwestern type tube still, to its equipment at the company's topping plant at Allen, Okla. The new equipment, built as a turnkey job by the Southwestern Engineering Corp., will bring the Sunray's refining capacity to around 6000 barrels per day.

The installation consists of a pipe still and an 82-foot main fractionator. Side cuts of naphtha and gas oil will be made from smaller fractionators. Construction of the towers will be such that it will be possible to gap one cut.

The crude will enter the unit at the top. It will be heated through the control section mounted on the top of the main fractionator. The stream is then split, part of it passing through the gas oil heat exchanger, and part through the residuum heat exchanger. From there it will pass to the dehydrator, where it will be dehydrated under pressure.

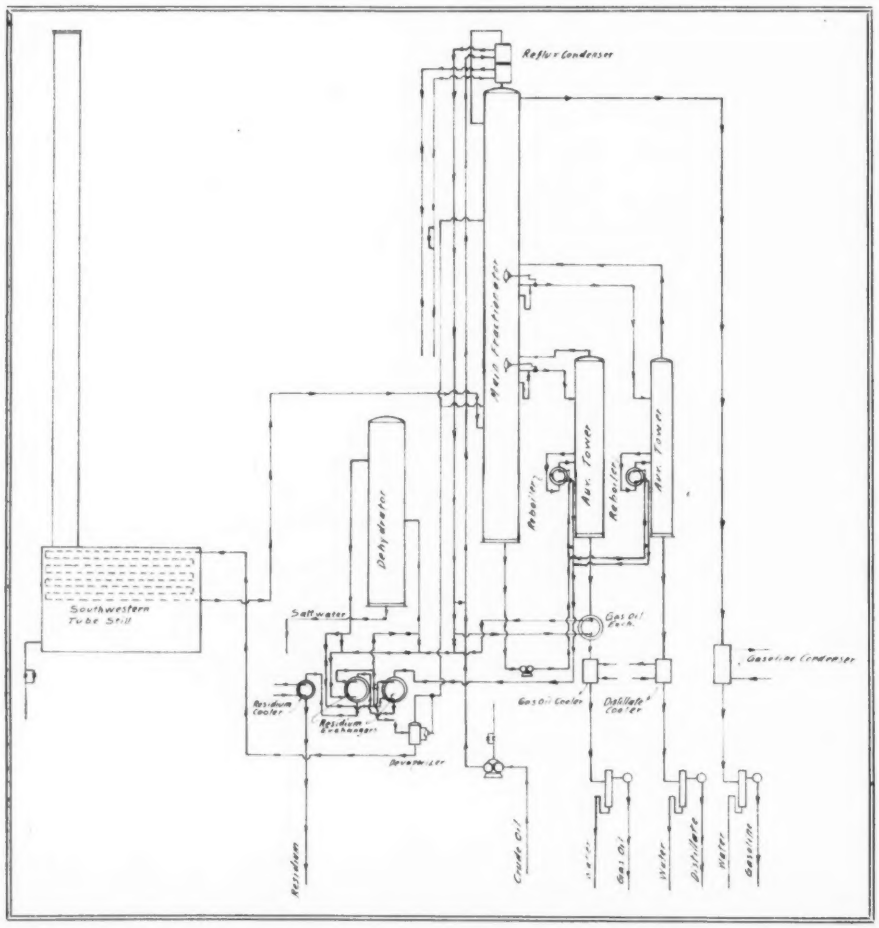
From the dehydrator the stream passes through the second resid heat exchanger to a devaporizer, where the lighter ends that will flash off at about 325 F. will be sent to the main fractionator, and the crude stream to the still. The still is pyrometrically controlled.

The stream is then admitted to the lower, or evaporating end of the fractionator. The residuum will pass to the reboilers, where the two side cuts of naphtha and distillate will be made.

The crude on which the plant will operate is produced in the Allen pool by the Sunray. It is "sweet" crude. The gasoline made from it carries a high benzol equivalent, amounting to about 45 per cent. The gasoline commands a small premium, being sold as Sunray Anti-knock.

On plant scale operation, the following percentages of yields are expected:

Product	Percentage
Gasoline	20 per cent
Distillate 38-48	10 per cent
Gas Oil 32-34	36 per cent
Fuel Oil 16-20	32 per cent
Loss	2 per cent



Flow chart of new Southwestern distillation unit installed at Sunray plant

A.S.A. Approves Revised Testing Standards

CLEVELAND—The American Standards Association recently approved the revisions of a group of nine national standard methods of test and three tentative standard methods of test for petroleum products and lubricants. These methods of test, originally prepared and now revised under the sponsorship of the American Society for Testing Materials, are as follows:

American Standard Test Materials

Water and sediment in petroleum products by means of centrifuge.

Water in petroleum products and other bituminous materials.

Distillation of gasoline, naphtha, kerosine, and similar petroleum products.

Distillation of natural gas gasoline.

Burning quality of kerosine oils.

Burning quality of mineral seal oil.

Burning quality of long-time burning oil for railway use.

Detection of free sulfur and corrosive sulfur compounds in gasoline.

American Tentative Standards

Cloud and pour points of petroleum products.

Melting point of petrolatum.

Determination of autogeneous ignition temperatures.

Copies of the revised standards and tentative standards may be obtained from the office of the American Standards Association, 29 West 39th Street, New York City, or from the American Society for Testing Materials, 1315 Spruce Street, Philadelphia, for 25 cents each.

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New Refining Patents

Sweetening Cracked Distillates. U. S. P. 1,777,619, Oct. 7, 1930, application filed Sept. 6, 1927; Wilson H. Low, Assignor to Richfield Oil Co. of California.

IT HAS been found that a more efficient sweetening agent than the precipitate known as "black-strap" can be made by suitable preparation of lead sulfide, and that the improved agent can be kept in an active state by intermittent treatments with aqueous solutions of sodium sulfide. Cracked gasolines, sweetened with the new agent, have greater color stability than distillates sweetened with "black-strap."

The lead sulfide is precipitated from a water solution of a lead salt by means of hydrogen sulfide or a solution of a soluble sulfide. The precipitate is washed and dried at 110° C. Thus prepared, the sulfide is effective in amounts of, say 0.1 to 5 pounds per barrel of distillate, and can be used for some time before revivification becomes necessary. To revivify the spent agent, it is treated with aqueous sodium, sulfide, washed with water and dried with hot air.

What is Claimed

Sweetening cracked gasolines by filtering through a filter bed containing dry comminuted lead sulfide prepared by reacting on a water solution of a lead salt with a water soluble sulfide and dried by contact with air, and intermittently revivifying the sulfide by treatment with a water soluble sulfide in solution.

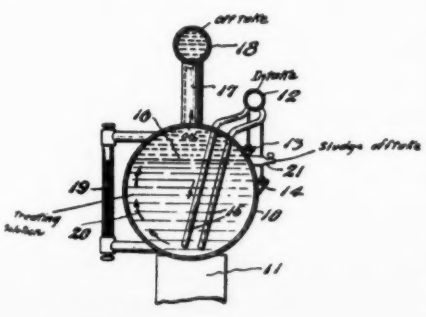
* * *

Absorbent Oil Treater. U. S. P. 1,777,005, Sept. 30, 1930; application filed Aug. 13, 1928; John L. Looney.

IN THE absorption process of recovering gasoline from casing head gasoline, it is desirable to remove sulfur and solid matter (taken up from the gas) from the absorption oil before entering the preheater in which the gasoline is released from the heavy oil. Otherwise, sulfur and other solids are deposited on the preheater surface in a form which is difficult to remove.

It has now been found that this is best accomplished without forced circulation, by allowing the oil to rise slowly through a chemical treating solution, in which sulfur and other solids are caused to form a sludge. This sludge floats on the chemical solution; the desulfurized and clarified heavy oil can be drawn off from above the sludge for further treatment to recover the gasoline.

Apparatus, of which a cross section is shown in the drawing, has been designed for this treatment. An elongated horizontal tank, 10, rests on a base, 11, and is fed with oil from a longitudinal header, 12, supported along the tank by brackets, 13 and 14. From the header a series of feed tubes, 15, extend down nearly to the bottom of the tank. Their discharge outlets are at an angle to the vertical axis of the tank, so that the oil rises along the side, 20, of the tank and the sludge passes to the opposite side, where flattened discharge cocks, 21, are placed at the solution level within the tank. Thus the accumulated sludge can be removed with very little loss of either oil or solution. The oil is discharged from the tank through the pipes, 17, into the offtake header, 18, which is of larger diameter than the inlet header. The discharge is effected slowly and without agitation, to permit clarification of the oil and prevent carrying over of sludge or chemical solution.



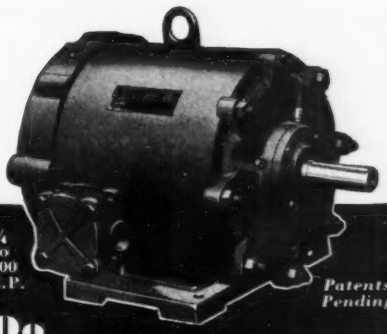
What Is Claimed

In an oil treating apparatus, a horizontal tank for chemical solution, an intake manifold at one side, a series of reduced feed tubes extending at an angle downward through the tank and discharging only toward one side, to effect upward flow, a discharge manifold above the tank to receive oil rising therefrom, and a sludge outlet at the side of the tank.

* * *

Desulfurizing Oils. U. S. P. 1,776,340, Sept. 23, 1930, application filed Nov. 6, 1924 and in Great Britain Jan. 11, 1924; Ferdinand B. Thole and Stephen T. Card, Assignors to Anglo-Persian Oil Co., Ltd.

THE hypochlorite treatment for desulfurizing oils by oxidation of the sulfur compounds has the disadvantage that the hypochlorite solution is unstable except in presence of some free alkali. The amount of alkali needed to stabilize the reagent during storage and to inhibit chlorination of the hydrocarbons in the oil decreases the reactivity of the reagent, so that the



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Louis Allis type E . . . the *first* fan-cooled "Explosion-Proof" motor . . . is the *last word* in safety . . . for it is *approved by Underwriters* for use wherever petroleum products are made, used, or handled.

Widely used in refineries and natural gasoline plants . . . . for direct connection to standard pumps, centrifuges, etc.

Make SAFETY FIRST the *rule* in your plant! Specify L.A. "Explosion-Proof" motors for all explosive and questionable atmospheres.

¼ to 100 H.P.

No Fire Wall Required

Warning:—Do not confuse with non-approved so-called "vapor-proof" motors.

Write for Bulletins on L.A. "explosion-proof," multi-speed, enclosed fan-cooled, and usual standard types of motors; M-G sets; frequency converters.

THE LOUIS ALLIS CO.
Milwaukee, Wisconsin
Offices in Principal Petroleum Centers

LOUIS ALLIS

"EXPLOSION-PROOF" *Electric* MOTORS

The Law of Chemical Patents

"THE Law of Chemical Patents" by Edward Thomas, is written for the man who is interested first in what a patent shows on its face; what its relation is to the prior art; and what its relation is to possible infringements.

The book tells what has been said in the courts on every phase of the subject. For example it cites *what the Courts have said on*:

Nature of a Patent; Disclosure in a Chemical Patent; the invention, its date and nature; nature of a patentable process; anticipation by prior uses; by prior publication; Nature of a Valid process claim in the patent; infringement of valid process claim; Permissible amendments; amending patent after it issues; double patenting and the joinder of inventions; assignments, licenses and royalties; contests between rival claimants; patent suits and patent evidence and some other more minor subheads.

Actions taken in courts are cited with complete references to the legal documents involved, with quotations of the statements pertinent to the subject under discussion. Each chapter is introduced with a brief outline of the subject, and the remainder is devoted to quotations which definitely answer questions on which information should be available to those holding patents or about to apply for them.

The present complicated situation with regard to patents on refining processes, especially cracking, makes this book particularly valuable to every refiner, oil attorney, chemist, etc. 420 pages.

———*Clip and Mail*———

NATIONAL PETROLEUM NEWS

Penton Bldg., Cleveland, Ohio

Send me at once "The Law of Chemical Patents" by Edward Thomas.

Enclosed is $6.00.

Name.....

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City.....

desulfurizing action is relatively inefficient.

It has now been found that the reaction can be accelerated by activating the hypochlorite during or immediately before the treatment. For this activating or de-stabilizing effect it is essential that the acid agent shall not be a strong acid, and that it shall be uniformly distributed, to avoid local excess. Carbon dioxide is therefore chosen as the agent for lessening the alkalinity, and apparatus is provided for mixing it uniformly with the oil. Salts which yield acid by hydrolysis, e. g. ferric or ferrous sulfate, may be used instead of carbon dioxide. As an example, after 10 minutes contact with an oil sample, only 33.7 per cent of untreated hypochlorite had been used up; then, after passing in sufficient carbon dioxide to remove free alkali, agitation was continued another 5 minutes, when 91 per cent of the hypochlorite had been used up. Very simple apparatus can be used for introducing the carbon dioxide.

What is Claimed

In refining liquid hydrocarbons, substantially de-stabilizing an aqueous solution of a hypochlorite containing a slight excess of free alkali, by adding carbon dioxide to the solution, and washing the liquid hydrocarbons with the solution thus de-stabilized.

* * *

Electric Discharge Treatment. U. S. P. 1,779,356 and 1,779,402, Oct. 21, 1930, applications filed March 10, 1922 and Nov. 21, 1928; Louis B. Cherry (1,779,356) and Herbert R. Rowland (1,779,402), Assignors to C. and C. Developing Co.

THESE related inventions have to do with the application of an electric discharge as an aid to the cracking of heavy oils to form light distillates.

The first specific improved apparatus for treating the cracking stock to a high-efficiency discharge, in which a way as to increase the yield of light distillates and minimize the losses due to decomposition or undesirable reactions. The new system is featured by independent furnaces and heating flues, which permit temperature variations at different points along the reaction conduit. The changes are so adjusted as to give the best obtainable yield of light distillates.

The novelty of the second invention lies in the fact that low-frequency electric discharges can now be successfully used in the cracking operation, whereas it had hitherto been thought that high frequencies were essential to efficient conversion. Low frequencies are defined as excluding those greater than audio frequencies, and the assigned extreme upper limit is 10,000 cycles per second. For the purpose of this process, however, the term means usually not over 500 to 1000 cycles per second, and refers specifically to the preferred range which is about 25 to 150 cycles per second. The advantages of low as compared with high frequencies are ease of control, and greater uniformity both in the quality and the quantity of the desired light distillates.

What Is Claimed

1,779,356: Apparatus for treating hydrocarbons comprising a conduit embodying several reaction tubes in series; longitudinal heating flues arranged exteriorly of the tubes, with independent temperature control for each; and means for maintaining high-frequency electric discharge in the tubes.

1,779,402: Converting a mineral oil to lower-boiling products by subjecting its vapor, mixed with a hydrogen-containing gas, at cracking temperature, to a high-tension alternating current electric discharge of frequency of 25 to 150 cycles per second, and separating the lighter distillates from the vapor.

* * *

Heating Oils. U. S. P. 1,779,199, Oct. 21, 1930, application filed Dec. 10, 1926; Chas. W. Stratford.

AS AN improvement in heating practice, in raising hydrocarbon oils to distillation or cracking temperatures, a furnace setting is provided in which combustion gases are circulated consecutively around vertical cylindrical heating tubes, in countercurrent to the direction of flow of the oil within the tubes; and the oil is rotated at high speed to promote the efficiency of the heat exchange. The fuel is injected tangentially into the combustion chambers to give a high rotative effect, and the combustion gases are kept at high speed in passing around the heater tubes.

The walls of the combustion chambers are kept at a high temperature to promote heat transfer by radiation from the first chamber to the heater tubes; from the second and third chambers heat is transmitted mainly by radiation and convection; and by convection from the chamber which contains the preheater coil. Owing to the high speed of the combustion gases and the oil, maximum rate of heat transfer per unit area is attained; the oil will not carbonize, and the heating surfaces will not be burned.

Rotation of the oil at high velocity in the heater tubes may be maintained by a rotor, or by tangential injection at the upper and lower ends, or by other means which will aid heat transfer by promoting turbulence in the oil.

What Is Claimed

A cyclic system for heating liquids by passing them in linear flow to an energy source, converting the linear flow to spinning rotation, reconverting the spinning energy to linear flow, recycling a portion of the liquid to the energy source and removing a portion of the liquid, while heating the outer surface of the body of spinning liquid.

Four 12" Tube-Turns—two 90°s and two 60°s—in vacuum lines of the Carter Oil Company's gasoline plant at Seminole, Oklahoma.

WHEN ANGLES ARE "ODD"

Here is one of those little things about Tube-Turns, the *stock* fittings for pipe welding, that looms BIG in the drafting room and on the job:

Working with Tube-Turns instead of cast fittings you can make odd-angle turns almost as easily as the regular 45°, 90° or 180° turns.

180° CUTAWAY 90° 45°

Left: Cutaway 180° Tube-Turn, showing uniform thickness of walls—no thickening, thinning or buckling. Tube-Turns are made in 45°, 90° and 180° types—in sizes 1" through 18" Standard I.P.S. and 1½" through 12" Extra-Heavy I.P.S.

The 60° turn in the photograph above, for instance, was made simply by cutting down a 90° Tube-Turn. Such cuts can be easily made because they always occur *straight across the pipe.* Thus even the most difficult compound turns, with changes in both direction and grade, can be quickly fabricated *on the job* with Tube-Turns and welding! . . . . These are only incidentals, however, in the real list of Tube-Turn advantages. Tube-Turns are lighter—stronger—non-porous—easier to insulate—cause less pressure-drop—easier to install—easier to salvage—*and have the same co-efficient of expansion and contraction as the pipe in the line.*

35 ADVANTAGES

Tube-Turns are now in constant use by almost every important process industry. . . Would you like to know *all* the reasons why? They are yours for the asking. *Address:* TUBE-TURNS, *Incorporated,* 1321 S. Shelby Street, Louisville, Kentucky.

TUBE-TURNS

The Stock Fittings for Pipe Welding

P. V. Bartholow, foreman of the Skelly Oil Co. grease plant; C. E. Gore, superintendent of the lubricating oil plant; and J. Litsey Smith, in charge of the lube oil department for the Skelly company

Skelly Building Grease Plant At El Dorado

ELDORADO, Kans.

A COMPLETE grease plant is being built by the Skelly Oil Co. at its Eldorado refinery. It will have a capacity of one half million pounds per month and will be in operation about Jan. 1.

A feature of the plant is compactness. No radical departures from accepted practice in grease plant design have been attempted.

A three-story brick building houses the plant, each floor having approximately 3000 square feet of floor space. On the top floor will be stored the raw materials, the storage tanks feeding directly into the finishing kettles on the second floor. Raw materials can also be pumped directly to the kettles without using the storage facilities.

The filling and packaging equipment is on the first floor. Pumps, motors, etc., will be in the basement of the building. Product storage will also be in the basement.

Seven kettles will be installed. Two will have capacities of 1000 gallons each, two will be of the 250-gallon size. There will be one 500-gallon pressure kettle, and two 250-gallon measuring kettles.

Stirring apparatus is direct drive, with speed reducers, to make for a greater flexibility in operating. Motors will be controlled by magnetic switches, with wall switches on each floor. All kettles will be heated by steam jackets. Blackwell pumps will be installed, having 200 gallons per minute capacity, with 4-inch suction and 3-inch discharge lines.

In the manufacturing process, control will be manual. The inlet temperature of the oil will be about 60 degrees F to 70 degrees F. The soap stock will average about 300 degrees F. Kettle temperatures will be maintained at around 180 degrees F. to 190 degrees F.

The whole operation is expected to consume no more than two hours. The grease will be drawn off immediately, and not allowed to remain in the kettle.

Each kettle will be equipped with an indicating thermometer and an electrical thermostat. Particular attention will be paid to the requirements of modern high pressure greasing guns.

The grease plant is to be hooked up with the lubricating plant in such a manner that the latter's pumps can be made to function anywhere in the grease plant, and vice versa.

P. V. Bartholow is grease plant foreman. General operations will be supervised by J. Litsey Smith, who is in charge of the lube oil department of Skelly Oil Co. at Eldorado.

Home-Made Barrel Washer Handles 250 a Day

ELDORADO, Kans.—A home-made barrel-reconditioning installation that handles an average of 250 drums per day, at a cost of 13.2 cents per barrel, has been built by Skelly Oil Co.'s lubricating oil department at Eldorado. The cost per barrel includes all charges from picking up the empty drums at the railroad to placing them in storage painted and ready for service.

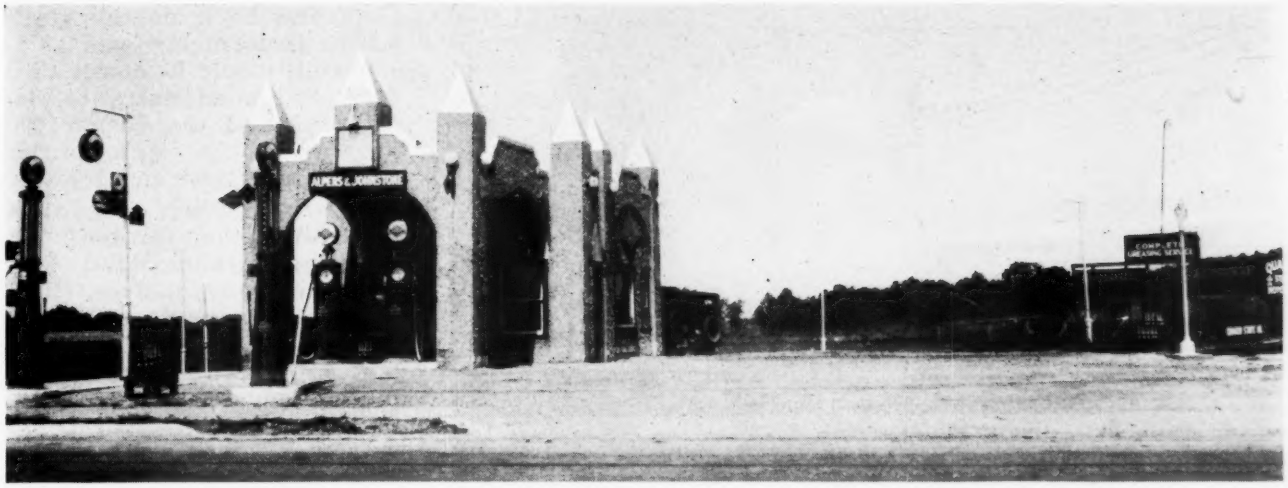
The barrel or drum is first given an inspection for dents, leaks, etc. A dented drum is placed in a press and filled with water from the refinery to 80 pounds pressure to remove the dents.

Then the barrels go to the washing machine, the only part of the installation not built by the Skelly. Here they are rotated against a series of wire brushes, to scrape paint, rust or scale from the outside.

A manually operated cradle lifts the drum from the washer, and it is rolled on a rack, where hot water and steam at 40 pounds pressure clean the inside. Hot air, heated by the exhaust steam from the washer, dries the inside.

From the dryer the drum goes to an inspector, who suspends an electric light on a cord into the barrel. When the barrel has been passed by the inspector it is sent to a painting booth.

Five men are employed to operate the washer. With the exception of the ouside washer, or scraper, all of the various units were designed by Skelly Oil Co. men and built from connections and other material already at hand.



Alpers & Johnstone service station at Rocky River, O., one of the most successful Cleveland district dealers of Sun Oil Co. products

«Suggesting» Oil or Grease Increases Sales, Station Operator Finds

By N. M. Mainpa

N. P. N. STAFF WRITER

CLEVELAND

WHEN a tourist takes the trouble to send you a greeting card from Europe or any other spot where he might be vacationing, simply because he stopped at your service station on his way over, you have created an impression.

When tourists pay a return call on their way back home you have created an impression; and when local motorists drive miles out of the city to trade with you regularly, even though the same gasoline is available across the street from their homes, you have stamped your personality upon them, the power of which no competitor's sales arguments can dim.

Thus theorizes Robert A. Alpers who has had the opportunity to put his theories to work since July 4 when he and E. B. Johnstone opened the Alpers & Johnstone service station on Center Ridge Rd., Rocky River, O., a residential suburb of Cleveland.

Previous to July 4 Mr. Alpers was operating a much smaller station within a stone's throw of his present one. When the operators of the latter station went broke, he became receiver for the property and moved to the larger station. He still owns the smaller one which now competes with him during the hours that it is open.

He has a personality that makes friends quickly, a breeziness that permits "kidding," and a not too aggressive sales policy.

"I don't believe in always trying to sell the motorist something," he said. "That is, openly. I do it, rather, by suggestion. 'And how about your motor oil? You don't need any? Well, maybe I better look anyway—perhaps a plug is loose or something else wrong,'" he will say.

The suggestion that something may be wrong, implying with it an offer to help rather than make a sale, finds favor with the motorists, Mr. Alpers finds.

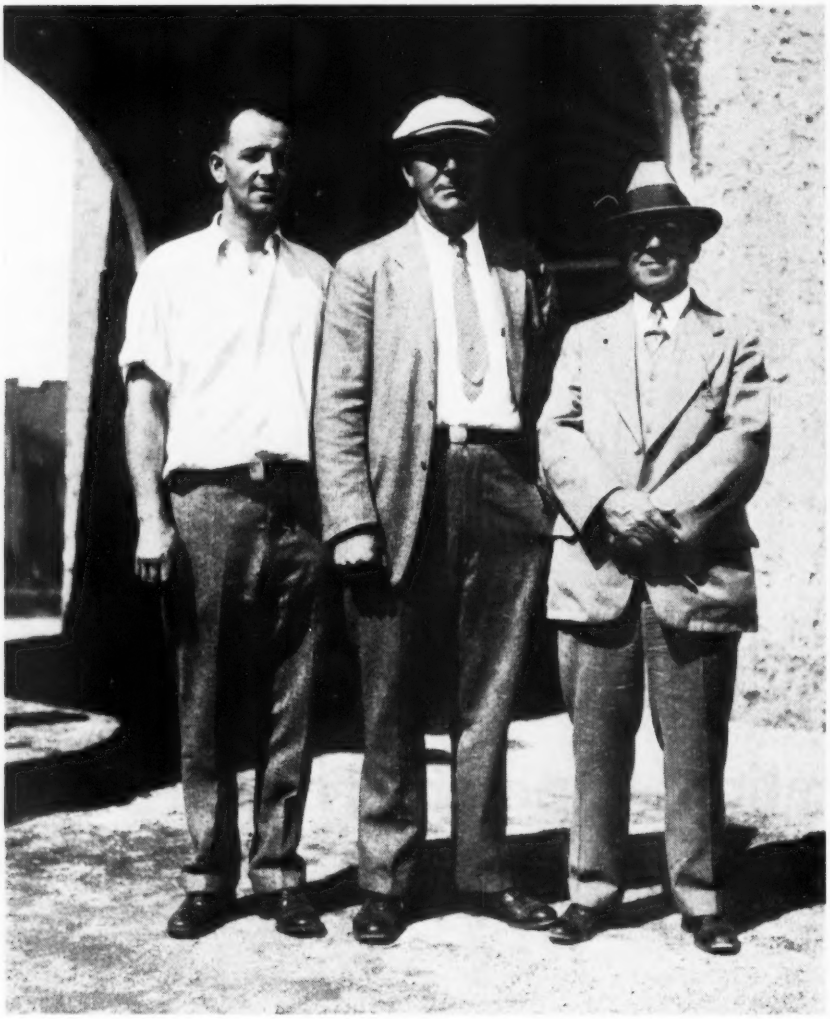
He gets his look at the oil and if the supply isn't what it should be, he then advises the driver to buy some; or, tells him how much he needs. His regular customers generally leave it up to him to replenish their oil or grease their cars when he thinks it necessary.

He always has some friendly remark for each customer. He indulges in "kidding" some of them.

"I want them to know," he says, "that I'm not only interested in the sale, but in them personally; then I can get in a few words about the Blue Sunoco gasoline I handle or something about our motor oil, or how good a greasing job we do—without being too obvious about the selling end of it."

Recently a car bearing an Indiana license with five passengers in it stopped at the station. While Mr. Alpers was waiting on them, he engaged them in conversation and learned that four of them were bound for Europe.

"Well," he flung at them as a parting challenge, "if the gasoline I'm putting into your tank isn't any good, I don't suppose I'll ever hear from you again."



Left to right: E. B. Johnstone, Robert A. Alpers, owners of the Alpers & Johnstone service station and barbecue, and W. J. Keyhan, representative in Cleveland for the Sun Oil Co.

Whereupon the driver took his name and address with the promise that he would send him a card whether the gasoline was good or not, and stepping on the gas, the party was off.

A month later Mr. Alpers received a card, from Bremen, Germany, signed by this family who wrote that "believe it or not, they were *not* out of gas!"

While receiving a post card was never considered a particularly glorious triumph, it was somewhat of a tribute in this instance. To be so remembered by people who have a host of friends and relatives back home who must be written to, meant that this Indiana tourist family had carried with them a vision of a chance service station man across thousands of miles of land and sea into scenes engrossingly strange and interesting to them.

At the time the writer visited the station Mr. Alpers was expecting this family back at his station any day. Not only will they always stop at the particular station whenever they travel that way, but it is a sure bet that they will tell everyone they know to be sure to stop there. Such is the power of personality.

About nine out of ten tourists who bought goods on their way out have stopped at his station on their way back from vacations this summer, Mr. Alpers estimates. His trade is equally divided between tourists and local business, and several trucking concerns and busses also patronize the station.

For the convenience of tourists, the station has rest rooms fully equipped for men and women, and plainly marked out in front where they can be seen. In fact, Mr. Alpers moved the ladies' rest room from the back of the station where it formerly was to the side so it would be closer to the front, with an entrance door right around the corner from the front. A sign projects prominently over the door.

This rest room is equipped with telephone, for both local and long distance calls. There are other conveniences. There is also a radio at the station which announces baseball scores sooner, of course, than the afternoon newspapers could get them to this rural community. This radio attracts many people to the station, Mr. Alpers said.

A road map of Ohio is framed on the wall in full view of the driveways and Mr. Alpers himself keeps posted on road conditions.

A small packet of matches advertising the station and Sunoco gasoline and oil, is handed out to each gasoline customer.

Bus schedules and literature are available and the station is a bus stop of the Great Eastern Stages, Inc.

Emergency repairing only is done and necessary accessories are handled, but when major repairs are required, Mr. Alpers directs motorists to a man down the road who is qualified to do such work.

An effort is made to keep the sales room as clean as possible. The motor oil tanks are rubbed frequently with a cloth saturated with gasoline, leaving a spotless shining surface. People coming in thus see a neat and tidy station interior. Blue and yellow emergency gasoline cans for the stranded motorist are neatly shelved.

Windshields are cleaned with a wet rubber sponge and dried with a chamois, which leaves a clearer and cleaner glass in less time, Mr. Alpers says. The sponge hangs on a nail on a station pillar over a pail of water where it is handy for quick use.

Mr. Alpers cautions his attendant and makes it a habit with himself to lay the gasoline tank cap every time on the spare tire at the back of the car. It's there in sight so it will not be forgotten and it does not mar the finish nor leave spots on the surface if laid on any part of the car.

FIGURE 106-A

This one-piece screw-over bonnet won't distort . . .

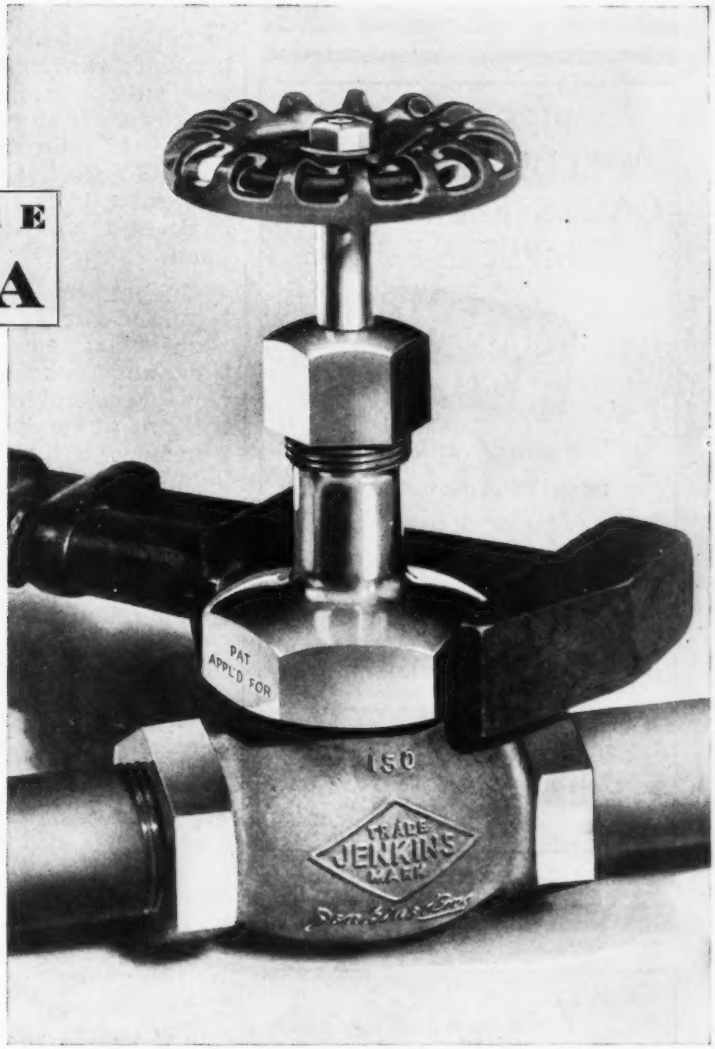


FIG. 106-A, *Screwed, Jenkins Standard Bronze Globe Valve, with one-piece screw-over bonnet and slip-on stay-on disc holder. For 150 lbs. steam working pressure, or 250 lbs. oil, water, gas working pressure.*

Here is a valve that doesn't "fear" a wrench. It is a Fig. 106-A Jenkins Standard Bronze Globe with the one-piece screw-over bonnet.

This bonnet construction provides unusual strength to resist the strains of frequent removal. You can take the bonnet off and replace it repeatedly, and it won't distort. The large hex faces enable you to get a full purchase with a wrench.

Another advantage of Fig. 106-A is the slip-on stay-on disc holder . . . . a real innovation, possible only in this screw-over bonnet design. Ask your supply man to show you this Jenkins. Its superiority of construction and finish can be seen at a glance. It is made also in angle, cross and check types, screwed or flanged. Write for Bulletin 141 containing details.

JENKINS BROS.

80 White Street, New York, N. Y. 524 Atlantic Avenue, Boston, Mass. 133 No. Seventh Street, Philadelphia, Pa. 646 Wash. Blvd., Chicago, Ill. 1121 No. San Jacinto, Houston, Tex.
JENKINS BROS., Limited, Montreal, Canada; London, England
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Jenkins
VALVES
Since 1864

JENKINS VALVES ARE ALWAYS MARKED WITH THE "DIAMOND"

PIPE BENDS
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COMPLETE PIPING

LIMBERT PIPING

We manufacture ordinary requirements or design and manufacture special piping for any refinery condition. A third of a century of piping leadership.

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570 Fulton Street, Chicago, Ill.
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Detroit, Mich.

TREATING PLANTS

KELLOGG

The M. W. Kellogg Co., 225 Broadway, New York; Tulsa, Okla., Philtower Bldg.; Los Angeles, Cal., 1031 So. Broadway

He will never permit a man to get out of his car to wait on himself; that is, to serve himself with water or put air in his tires. If they make a move to do this, he call out, "Hey, don't do that, that's my job!" The men usually grin and sit back in the seat to be waited upon.

One motorist, who since has brought three or four other regular customers to the station, began trading at Mr. Alpers' station because the attendant at the Independent station across the street from his home dispensed gasoline to customers habitually with a smoking cigarette in his hand! These motorists drive four miles out of Lakewood, O., to patronize this particular station, although the same gasoline is available nearer their homes.

The first thing Mr. Alpers did when he took over this station was to haul away two truckloads of old tin cans and other rubbish that the former owners had accumulated at the rear. The unkempt grounds were cleaned up and leveled off, the gravel was raked and smoothed over and parts of the building and all equipment were repainted.

The station building is of gray stucco. The pyramid like points of the pillars are painted in glistening aluminum paint visible far down the road, particularly when the sun shines. There are two grease racks at the back of the site.

Across the road is a substantial looking barbecue where chicken and steak dinners may be had. There are tables and a good sized room for dancing. The windows are hung with gay colored drapes.

Mr. Johnstone manages this place and encourages the gasoline business by mentioning the gasoline and oil available at the station next door. Mr. Alpers in turn suggests to the motorist that he might be hungry and he knows a swell place to get a steak or sandwiches, and thus directs him to the barbecue.

Mr. Alpers says he believes in uniforms for station attendants because they look neat and "put snap into the parade."

NEW EQUIPMENT

The Benjamin Electric Mfg. Co., Des Plaines, Ill., covers comprehensively in 45 pages better lighting systems for industrial plants in its revised handbook "A Guide to Productive Lighting for Industry."

The book covers industrial plant lighting from the planning of the system up to floor plans with typical installations showing the proper mounting heights and spacing of light units. Data are also furnished on the use of the foot-candle meter, wiring, illumination calculation tables, on Benjamin reflectors and other lighting fixtures.

* * *

C. J. Tagliabue Mfg. Co., Park and Nostrand Sts., Brooklyn, N. Y., has added two new devices to its refinery equipment line. These are the Tag hydrometer with streamline tip and the Tag Saybolt thermostatic viscosimeter for testing viscosity of lubricating oil.

The new hydrometer has no corners to collect dirt and instead of the usual mercury ballast, a low melting point alloy in a solid piece has been fastened in the bottom so that it cannot come loose even when the hydrometer is inverted.

The new features added to the viscosimeter include a pilot lamp which permits easy setting of the bath by indicating whether the contacts are open or closed. A flickering light visible from any point in the room indicates that the bath is being controlled and is operating properly. Sticking contacts are prevented by one contact being oscillated by means of a cam on the propeller shaft.

The bath heats quickly to any test point and the oil is used instead of water. The stirring insures uniformity of temperature and maintains the proper difference between tube temperature and bath temperature as required by the American Society for Testing Materials, the company says.

ADVERTISING PAGES REMOVED

AUTOMOTIVE TRANSPORT

THE largest single cost item in the wholesale distribution of petroleum products is the delivery cost according to a survey of oil delivery systems recently completed by the General Motors Truck Co.

Profits earned by distributors under average conditions are likely to vary in a reverse ratio to delivery costs, the truck company found. For example, an analysis of expenses and profits of five distributors with small delivery costs was compared with a similar analysis for five other distributors with larger delivery costs.

One group with delivery costs ranging from 0.4 cent to 0.6 cent per gallon had a total delivery cost of 17 per cent. All other costs totaled 74 per cent, leaving 9 per cent for profit.

The second group showed delivery costs ranging from 0.8 to 1.2 cents per gallon. In this case the average delivery cost was 31 per cent. All other costs totaled 67.2 per cent, leaving 1.8 per cent for profit.

To ascertain what makes the difference between high and low motor truck operating costs the General Motors survey went into all phases of motor transport management including routing, loading and unloading, maintenance, lowering delivery peaks, tractor-trailer operation, etc.

Lost time was found to be one of the most important fields for the jobber who would reduce his expense. The following questions are suggested for each truck operator to answer:

1. Are my trucks being operated to get maximum use of the minutes in each working day?

2. Are my trucks getting a maximum of work accomplished each minute that they work?

3. Are my trucks moving profitable loads a maximum part of the time?

To bring home the value of time the truck company made up an estimate of the value of truck time which is reproduced in the accompanying table. This shows that a 3½-ton truck costs $1.13 each idle hour. It was found that fixed expenses make up 80 to 90 per cent of the total operating costs of each truck. Repairs, maintenance, fuel and oil seldom exceed 15 per cent.

Time studies were made in oil companies to see how much truck time is lost. In the case of one distributor in the middle west with eight trucks the idle time in three months (January, February and March) was found to be 34 per cent. Out of 3660 working hours there were 1248 idle truck hours.

For one large western refiner a time study was undertaken last January with amazing savings. By June it was found that 448 trucks were able to care for the company's business which included a good increase in volume, as compared with 652 trucks in June, 1929. There was a saving of 31 per cent in trucks needed and of 35 per cent in total delivery cost.

The General Motors Truck Co. found that time lost in the repair shop is the most costly of all time losses. This loss is being kept down in many companies by regular inspection of equipment by someone else than the driver and by immediate attention to small repairs.

Although the oil companies have preached greasing and oiling regularly for years in sales work, the truck company found that many distributors allow their own trucks to pile up repairs by failure to lubricate their own trucks properly.

Time is lost at the bulk plant due to:

1. Poor yard layout.
2. Poor loading facilities.
3. Careless methods of dispatch.

Many jobbers have been able to reduce lost time by making minor changes in yard layout to eliminate excessive truck maneuvering. Others have

Value of Truck Time

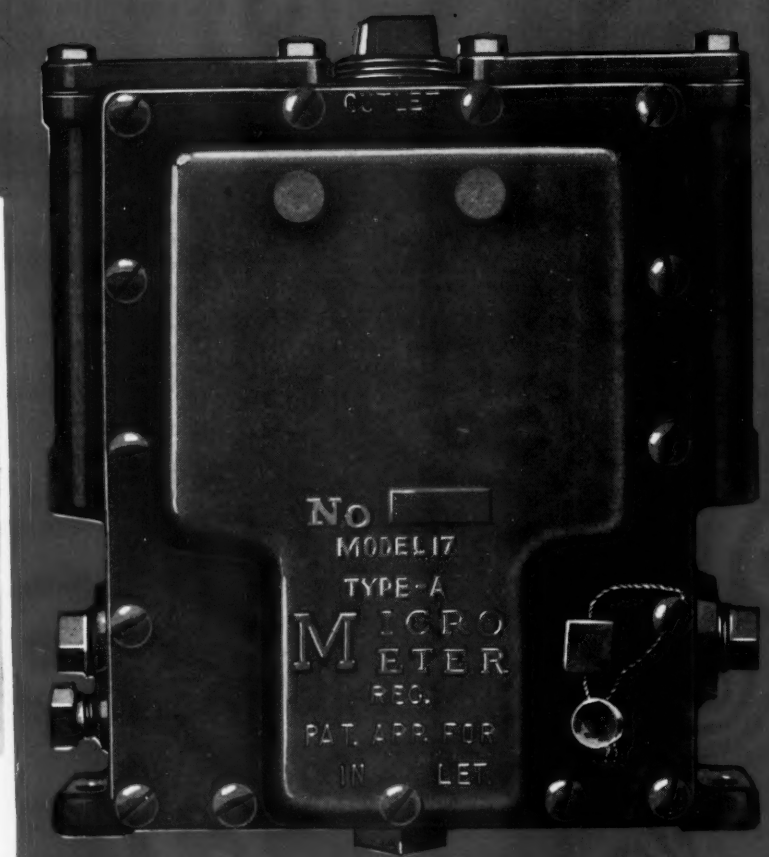
BASED on typical figures for a 3½-ton tank truck, the fixed expenses of operation for one year are as follows:

Depreciation (25% each year)	$1080.00
Interest on investment	210.00
Garage rent	120.00
Property tax	11.00
Licenses	105.00
Insurance	212.00
Total fixed costs	$1738.00
Fixed costs per day (300 working days)	$5.79
Driver's wages per day	5.50
Fixed costs plus wages per day	$11.29

COST PER HOUR OF IDLE TIME

$1.13 on basis of 10-hour day

DEPEND



ONE-HALF ACTUAL DIMENSIONS

"Listed as standard by Underwriters' Laboratories"

MICRO METER

ABILITY

DEPENDABLE at varying delivery speeds.

DEPENDABLE at varying inlet pressures.

DEPENDABLE regardless of gravity of liquid or height of the suction lift.

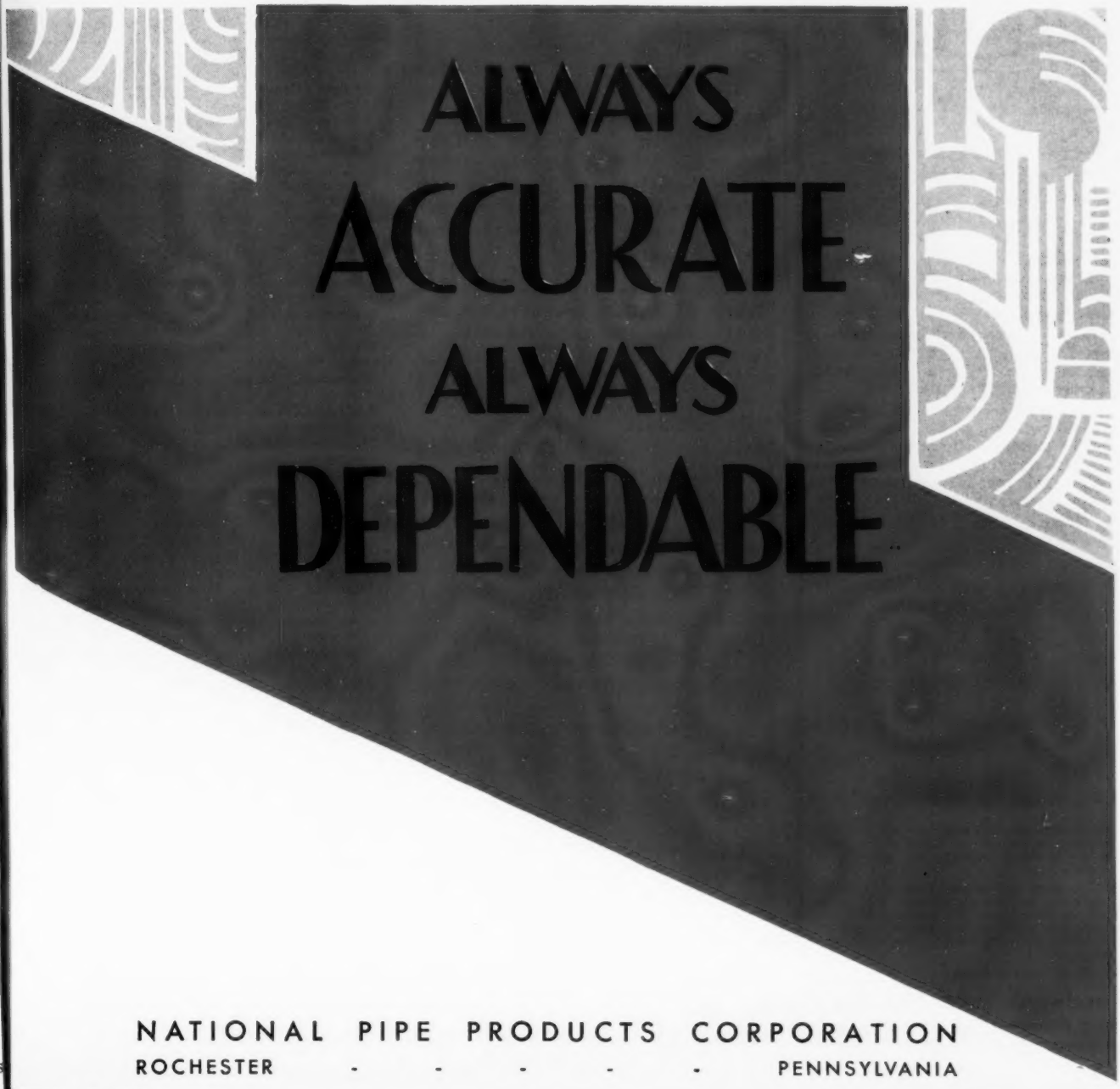
DEPENDABLE after years of service.

DEPENDABLE because it requires no adjustment after it leaves our factory.

DEPENDABLE in measurement—DEPENDABLE in construction . . . DEPENDABLE for the consumer—DEPENDABLE for the dealer—DEPENDABLE for the oil company.

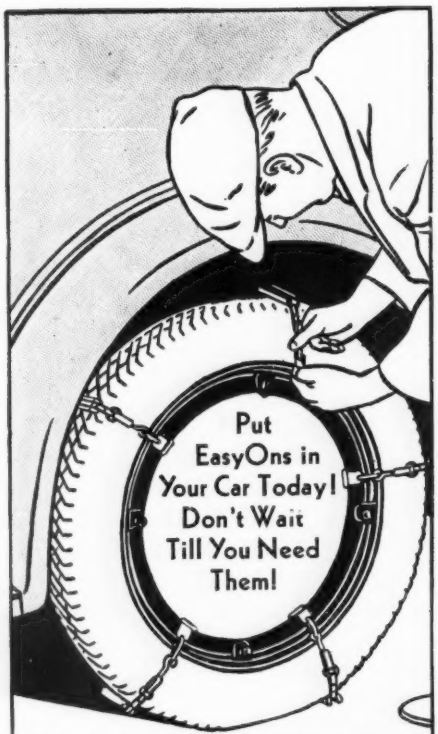
That's what we mean by

DEPENDABILITY



NATIONAL PIPE PRODUCTS CORPORATION

ROCHESTER - - - - - PENNSYLVANIA



Take the modern EasyOn way. Save your car and your temper.

Extra Winter Business for Gas Stations

Millions of EasyOn Chains have been sold to motorists during the past few winters.

When going is bad, motorists must have two things: Gasoline and Tire Chains. They would much prefer to buy them at the same place.

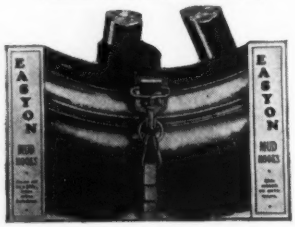
EasyOn Chains are single cross chains, snapped around the tire and rim between the spokes. Put on in a moment even when up to the hub in mud.

Made in two styles: EasyOn Mud Hooks to pull out of bad places, and EasyOn Rubber Roadgrips which are smooth running and quiet on pavements but hold even better than twisted link chains on any road.

Only 3 sizes needed to fit all sizes of tires.

Can be retailed at 25c to 50c each.

SPECIAL OFFER TO FILLING STATIONS



We can furnish you free display cards, like the illustration, in colors, on which a full size chain can be fitted enabling you to make a first class display.

EasyOn Chains sell the year around to tourists, farmers, campers and others who have occasion to travel over dirt roads which become slippery whenever it rains. The biggest sale, however, is during the Winter and Spring months.

Get in touch with us at once.

Woodworth Specialties Co.

Dept. 1, Binghamton, N. Y. Est. 1905

saved time by changing loading racks, or enlarging them. Where possible the truck company recommends that one man be detailed as a dispatcher to see that all deliveries are made with the lowest possible mileage. The dispatcher has one of the most important jobs at the bulk plant.

Time is lost on the route itself by the driver due to:

1. Poor routing in respect to mileage, roads and traffic.

2. Poor unloading facilities at point of delivery.

3. Slowness, thoughtlessness or carelessness on the part of customers.

4. "Not at h o m e," "no cash," and "credit doubtful," stops and the like.

Poor unloading facilities or slowness on the part of customers can only be remedied by educational work. If the difficulty is at a company owned station that can be remedied readily. Credit delays can be lessened by having the order taker familiar with credits on telephoned orders and advise the customer as to terms and time of delivery.

To lower the cost of peak delivery demands the truck company recommends efforts to build up "keep full" contracts and concentration of sales effort on large tank owners in dull periods. This is particularly applicable to fuel oil customers.

Results of the survey have been published in an attractive 24-page booklet titled "Delivering Oils and Gasoline Profitably." Copies of the booklet will be sent to any oil man interested without obligation. The company announces there will be no general mailing of the booklet without application. Requests may be mailed to the General Motors Truck Co., Pontiac, Mich.

The Pittsburgh Equitable Meter Co., Pittsburgh, manufacturer of meters and pressure regulating equipment, has opened a sales office at Davenport, Ia. A. L. Fritchey, formerly national representative for the company, is district manager.

New Stations Building

Note: Material used in this column is taken principally from newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy. Headquarters of companies and addresses of individuals are given wherever possible.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Service Stations

Fredericksburg, Va.—Sinclair Refining Co., 45 Nassau St., New York City.

Omaha, Neb.—MonaMotor Oil Co., Council Bluffs.

Fargo, N. D.—The Texas Co., Chrysler Bldg., New York City.

Eau Claire, Wis.—Frank Oatman.

Anamosa, Ia.—Skelly Oil Co., Skelly Bldg., Tulsa.

Ames, Ia.—Standard Oil Co. of Indiana, 910 S. Mich. Ave., Chicago.

Dodge Center, Minn.—A. Moroo.

Dodge Center, Minn.—Roy E. Gould.

Denison, Ia.—Farmers Union Co-Op Oil Co.

Dodge Center, Ia.—Skelly Oil Co., Skelly Bldg. ,Tulsa.

Mason City, Ia.—N. D. McEachran.

Deep River, Ia.—Robert Johnston.

Minneapolis, Minn.—D. H. Landy, 101 23rd Av. N.

Minneapolis, Minn.—Edward E. Hetzel, 4320 Lake Dr.

Minneapolis, Minn. — Cities Service Oil Co., Commercial Bldg., Tulsa.

Marion, Ill.—Thomas Martin, Carbondale.

Lima, Ohio—The Texas Co., Chrysler Bldg., New York City.

Pierceton, Ind.—A. W. McNamara.

Janesville, Wis.—John McDonough.

Tiffin, O.—Sinclair Refining Co., 45 Nassau St., New York City.

Kalispell, Mont.—Anderson & Reddick.

Independence, Ia. — Continental Oil Co., Ponca City, Okla.

Brainerd, Minn.—Brainerd Oil Co.

Brainerd, Minn.—Cities Service Oil Co., Commercial Bldg., Tulsa.

Council Bluffs, Ia.—M. Julius Hansen.

Omaha, Neb.—J. Swartz.

Rock Island, Ill.—Cities Service Oil Co., Commercial Bldg., Tulsa.

Galva, Ill.—E. D. Turner.

Delavan, Wis.—Wadhams Oil Co., 359 Clinton St., Milwaukee.

Columbus, O.—Refiners Oil Co., Refiners Oil Bldg., Dayton.

Minneapolis, Minn.—Direct Service Oil Co., 188 Glenwood Av.

St. Paul, Minn.—The Texas Co., Chrysler Bldg., New York City.

Warrensville, Ill. — Public Service Co. of Northern Illinois, N. Wacker Dr., Chicago.

Robstown, Tex.—Houston Oil Co., Petroleum Bldg., Houston.

Louisiana, Mo.—Phillips Petroleum Co., Phillips Bldg., Bartlesville.

Davenport, Ia.—Cities Service Oil Co., Commercial Bldg., Tulsa.

Moline, Ill.—Cities Service Oil Co., Commercial Bldg., Tulsa.

Pleasantville—Gail Horsman.

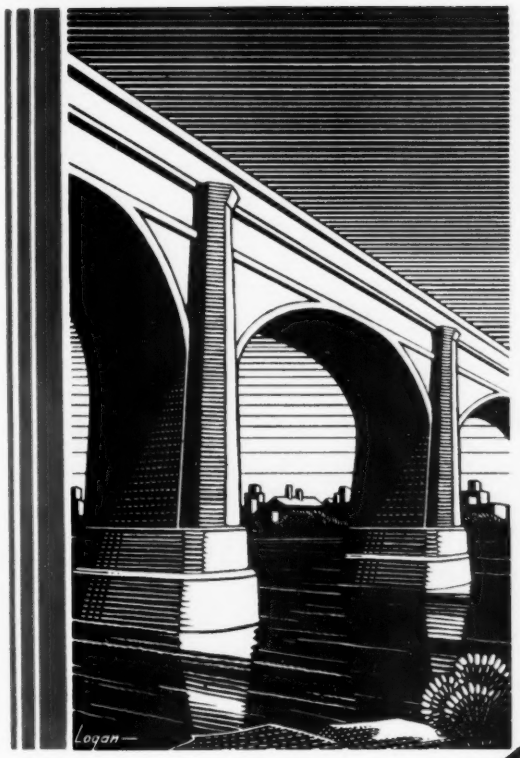
Stevens Point, Wis.—Shell Petroleum Corp., Shell Bldg., St. Louis.

St. Paul, Minn.—A. L. Overton, 216 Otis.

Thorp, Wis.—Royal Oil Co., Oil City, Pa.

Cedar Falls, Ia.—Phillips Petroleum Co., Phillips Bldg., Bartlesville.

Arcola, Ill.—Arcola Coal & Oil Co.



ELRECO

STABILITY

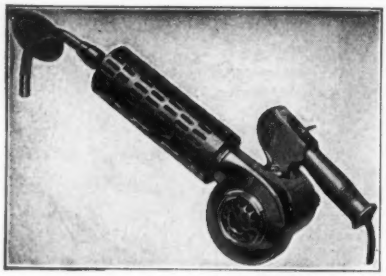
A bridge can not carry its loads, or withstand the floods, if its foundations are not solid. . . . A refinery without a solid financial foundation, supported by a careful business administration, is almost certain to fall carrying its jobbers with it to destruction. . . . . El Dorado's own foundation, built thru years of experience, backed by securities amply sufficient, directed by men whose financial prowess and business ability has been determined by success, is sufficiently strong to carry the burden of many jobbers.

This is the fourth of a series of vital features to consider in choosing a source of supply. The next subject will be "Quality", in this magazine next month.

The ELDORADO REFINING Co.

Established 1916

EL DORADO, KANSAS



Here Is The New TORNADO Heat Blower For Melting Chilled Grease In Differential and Transmission Cases

Everyone who operates a greasing station can speed up work and build profit and good will with a TORNADO Portable Electric Heat Blower.

You can't go through the cold weather without it—plug in the socket and in sixty seconds there is plenty of heat to melt frozen grease, thaw out brakes, pumps and drains, and dry distributor heads and coils. *Write for complete information.*

Breuer Electric Mfg. Co.
860 Blackhawk St.
Chicago, Ill.

$35.00 Complete

Patented in U. S. A. Other Countries Pending

SUPERIOR KEROSENE

A product of careful refining

Clear Sparkling Water White
Burning Oil

Why not let us ship you a trial car of 45 gravity SUPERIOR KEROSENE today?

SUPERIOR OIL WORKS
Warren, Pa.

Refiners of Petroleum

ON THE LAZY BENCH

Everybody Does It

Arriving in a small western town, an easterner was attempting to start up a friendly conversation with a native.

"Tell me," he said, "what is the status of the liquor supply around here?"

"Status," mumbled the native. "I dunno what you mean."

"I mean is it easy to obtain liquor and is there much of it around here?"

"Waal, mister," said the rustic, "all I can tell you is that a little while back, they turned off the water supply for a week and nobody knew it till the town caught fire."

—Texaco Topics

* * *

Mary had a little lamb,
She fed it gasoline.
One day it got too near the stove,
Since then it's not benzine.

—Salesmotor

* * *

A naval officer fell overboard. He was rescued by a deck hand. The officer asked his preserver how he could reward him.

"The best way, sir," said Jack, "is to say nothing about it. If the other fellows knew I'd pulled you out, they'd chuck me in."

—The Loreco Diamond

* * *

So far we have been unable to verify the rumor that a well known broker has traded his seat on the Los Angeles Stock Exchange for a seat at the U.S.C.-Stanford game.

—Union Oil Bulletin

* * *

"And another way for a girl to keep her youth," announced the Girl on the Twenty-Third Floor, "is to not introduce him to any of her girl friends."

—Pure Oil News

* * *

A Clever Game

Condemned Man—"Warden, I'd like a little exercise."

Warden—"All right. What kind of exercise do you want?"

Condemned Man—"I'd like to skip the rope."

—The Unloading Rack

For Such Emergencies

Breezy: "Have you a good opening here for an unusually bright and energetic young man?"

Business Man: "Yes, I believe we have—and please close it softly as you leave!"

—Pure Oil News

* * *

Goof (in library): "What are you looking for?"

Librarian: "ADAM BEDE."

Goof: "Maybe it rolled underneath this table."

—The Gas Line

* * *

Slightly Delirious Financier: "Nurse what did you say my temperature was?"

Nurse: "One hundred and three, sir."

Financier: "Right; when it gets to 103½, sell."

—The Vent

* * *

"How long will it be before your sister makes her appearance?"

"She's upstairs making it now."

—Union Oil Bulletin

* * *

Si: I hear ye've give up terbaccy, Ezry.

Ezry: Well, Si, I'm sorto taperin' off like; I don't swaller the juice no more.

—Pure Oil News

* * *

And now a little advice: Before you invest in a going concern, make sure you know which way it is going.

—Union Oil Bulletin

* * *

Have a Shot!

Old Lady—"You drunken beast! If I were in your condition I'd shoot myself!"

Drunk—"Lady, if you wash in my condishun you'd mish yershelf."

—The Unloading Rack

* * *

A committee of five usually consists of the man who does the work, three others to pat him on the back, and one to bring in a minority report.

—Pure Oil News

ADVERTISING PAGES REMOVED

Crude Production by Fields

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A. P. I.

PRODUCTION SUMMARY

	Nov. 29	Nov. 22
Production east of Rockies	1,666,000	1,674,650
Decrease		8,650
Total production in U. S.	2,265,900	2,281,850
Decrease		15,950
Crude oil imports	142,000	171,000
Decrease		29,000
Total new crude supply	2,407,900	2,452,850
Decrease		44,950

OKLAHOMA

	Nov. 29	Nov. 22
Allen Dome	12,250	13,150
Asher	900	800
Asher, West	13,750	13,050
Blackwell	2,350	2,300
Bowlegs	13,250	14,000
Braman	2,050	2,000
Bristow-Slick	12,100	12,200
Burbank	13,650	14,050
Carr City	11,550	12,550
Cromwell	6,200	6,300
Cushing	12,100	12,150
Davenport	900	900
Duncan Dist.	6,600	7,700
Earlsboro	16,650	20,900
Earlsboro, East	16,800	18,150
Earlsboro, So.	8,650	8,850
Fox	800	800
Garber	4,400	4,350
Graham	2,600	2,800
Healdton	10,000	10,300
Hewitt	5,400	5,500
Hubbard	1,050	1,050
Konawa	12,950	14,650
Little River	23,850	23,950
Little River, East	10,750	10,300
Logan Co.	3,150	3,100
Maud	3,000	3,200
Mission	7,050	7,400
Oklahoma City	92,800	73,350
Okmulgee, No.	9,300	9,400
Okmulgee, So.	6,000	6,100
Osage (Outside Burbank)	24,450	24,500
Papoose	2,250	2,300
Pearson	500	500
Sasakwa	4,550	5,000
St. Louis	21,550	23,300
Scholem-Alechem	9,200	9,350
Searight	6,250	6,800
Seminole	13,700	13,750
Seminole East	1,950	2,100
Thomas	400	400
Tonkawa	4,050	4,950
Wewoka	4,800	4,400
Yale-Jennings	5,400	5,500
Others	45,050	46,050
Total, Okla.	486,950	484,200
Increase		2,750

KANSAS

Augusta-Fox Bush	2,650	2,700
Churchill	3,400	3,400
El Dorado-Towanda	13,650	13,800
Florence-Covert	950	950
Greenwood Co.	17,000	17,050
Oxford	2,350	2,400
Peabody-Elbing	2,300	2,300
Rainbow Bend	1,000	1,000
Russell	2,800	2,800
Sedgwick	24,000	24,400
Voshell	6,550	7,450
Others	31,000	31,000
Total, Kans.	107,650	109,250
Decrease		1,600

NORTH LOUISIANA

Caddo, light	8,600	8,550
Caddo, heavy	2,800	2,800
Cotton Valley	1,850	1,850
De Soto and Red River	2,800	2,850
Haynesville	5,250	5,250
Holly	900	1,000
Homer	3,350	3,350
Sarepta Carterville	2,230	2,350
Urania	5,300	5,300
Zwolle	9,400	9,100
Others	1,700	1,700
Total, No. La.	44,200	44,100
Increase		100

ARKANSAS

Champagnolle	3,450	3,450
El Dorado	3,900	3,900
Lisbon	900	900
Nevada	1,050	1,050
Smackover, light	4,800	4,850
Smackover, heavy	35,700	35,750
Stephens	900	900
Others	1,200	1,150
Total, Ark.	51,900	51,950
Decrease		50

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,050	2,050
Elk Basin	700	650
Grass Creek	2,050	2,100
Labarge	1,450	1,800
Lance Creek	150	250
Lost Soldier	4,400	4,600
Oregon Basin	3,100	3,100
Rock River	2,150	2,150
Salt Creek	26,600	27,150
Others	3,650	4,000
Total, Wyo.	46,300	47,850
Decrease		1,550

Montana

Cat Creek	1,150	1,150
Pondera	1,700	1,200
Sunburst	3,550	2,550
Others	50	50
Total, Mont.	6,450	4,950
Increase		1,500

Colorado

Florence	550	450
Fort Collins	1,150	1,200
Moffat (Craig)	1,150	1,150
Others	1,350	1,450
Total, Colo.	4,200	4,250
Decrease		50

New Mexico

Artesia	750	750
Bal. Eddy Co.	150	750
Hobbs High	37,050	36,700
Bal. Lea and Eddy Co.'s	6,600	5,700
Hogback	450	450
Rattlesnake	1,000	1,150
Table Mesa	100	100
Total, N. M.	46,100	45,050
Increase		1,050
Total, Rocky Mountain	103,050	102,100
Increase		950

TEXAS (OUTSIDE GULF COAST)

Panhandle District

	Nov. 29	Nov. 22
Carson Co.	5,600	6,100
Gray Co.	53,100	55,600
Hutchinson Co.	14,250	13,550
Wheeler Co.	400	500
Others	300	300
Total, Panhandle Tex.	73,650	76,050
Decrease		2,400

North Texas

Archer Co.	13,350	13,500
Burkburnett	7,600	7,600
Electra	11,000	10,100
Iowa Park and K. M. A.	4,400	4,400
Montague-Cooke	9,300	9,300
Wilbarger	16,950	17,000
Others	1,750	1,750
Total, N. Tex.	64,350	63,650
Increase		700

West Central Texas

Brown Co.	4,950	5,000
Callahan Co.	3,000	3,000
Coleman Co.	2,650	2,400
Eastland-Desdemona	4,900	4,900
Jack Co.	1,950	2,000
Palo Pinto Co.	450	450
Shackleford Co.	5,100	5,150
Stephens Co.	5,350	5,400
Throckmorton Co.	700	750
Young Co.	13,400	12,700
Others	1,700	1,750
Total, West Cent. Tex.	44,150	43,500
Increase		650

West Texas

Crane and Upton Co.s	35,050	35,000
Crockett Co.	1,900	2,050
Ector Co.	7,950	4,850
Howard Co.	27,850	27,500
Jones Co.	1,400	1,400
Mitchell and Scurry Co.'s	2,100	2,200
Reagan Co.	25,150	26,400
Winkler Co.	54,850	56,500
Yates	103,450	101,500
Bal. Pecos Co.	4,100	2,800
Others	6,400	6,400
Total, West Texas	270,200	266,600
Increase		3,600

East Central Texas

Boggy Creek	2,100	2,250
Corsicana-Powell	5,250	5,200
Currie	300	300
Mexia	3,850	3,850
Nigger Creek	150	150
Richland	150	150
Van Zandt	27,500	27,600
Wortham	600	600
Others	200	200
Total, East Cent. Tex.	40,100	40,300
Decrease		200

Southwest Texas

Chapman Abbot	6,000	6,500
Dale	250	300
Darst Creek	29,650	34,300
Laredo Dist.	14,750	13,950
Luling	9,500	9,600
Lytton Spgs.	700	750
Salt Flat	16,100	15,600
Somerset	1,300	1,300
Others	600	650
Total, S. W. Texas	78,850	82,950
Decrease		4,100
Total, Texas (Outside Gulf Coast)	571,300	573,050
Decrease		1,750

GULF COAST

Coastal Texas

Barbers Hill	22,750	20,700
Batson	1,100	1,100
Big Creek	3,300	3,400
Blue Ridge	1,600	1,600
Boling	900	900
Damon Mound	700	700
Esperson	2,800	2,800
Fannett	550	700
Goose Creek	4,350	4,300
Hankamar	1,850	1,900
Hull	7,850	7,900
Humble	12,900	13,400
North Dayton	900	800
Orchard	2,200	2,300
Orange Co.	2,000	2,050
Pettus	8,450	8,400
Pierce Junct.	9,500	9,900
Port Neches	1,500	1,500
Raccoon Bend	8,750	8,900
Refugio Co.	27,300	27,650
Saratoga	1,200	1,200
Somerville	1,550	1,200
Sour Lake	2,100	2,100
South Liberty	2,800	2,900
Spindletop	13,600	13,900
Sugarland	12,000	12,000
West Columbia	4,900	5,300
Others	2,200	2,250
Total, Coastal Texas	161,600	161,750
Decrease		150

Coastal Louisiana

Edgerly	400	400
Evangeline	2,100	2,000
Hackberry, East	3,950	4,000
Hackberry, Old	900	900
Lake Barre	2,200	2,200
Lockport	4,700	4,850
Port Barre	2,250	2,250
Sulphur Dome	2,900	3,200
Vinton	5,400	5,250
White Castle	1,050	1,050
Others	3,500	3,400
Total, Coastal Louisiana	29,350	29,500
Decrease		150
Total, Gulf Coast	190,950	191,250
Decrease		300

California

Dominguez	10,000	10,000
Elwood-Goleta	35,300	40,500
Huntington Beach	27,000	28,000
Inglewood	15,500	15,300
Kettleman Hills	26,000	25,700
Long Beach	96,000	98,000
Midway-Sunset	59,000	59,500
Playa del Rey	42,000	40,300
Santa Fe Spgs.	94,000	93,400
Seal Beach	17,700	18,000
Ventura Ave.	48,400	46,500
Others	129,000	132,000
Total, Calif.	599,900	607,200
Decrease		7,300

Eastern

(Not including Mich.)	101,000	110,000
Decrease		9,000

Michigan

Mt. Pleasant	6,650	6,150
Muskegon	2,200	2,400
Saginaw	150	200
Total, Mich.	9,000	8,750
Increase		250

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations, Week Ended Nov. 28 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Nov. 28
Plants Reporting....	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)..	94,000	161,700	106,100	82,000	77,000	521,300
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs..	55,958 — 8.3	107,958 + 7.5	66,230 + 2.3	30,886 + 9.3	40,842 + 6.5	301,874 + 3.1
Da. Av. Other Oils...	8,869 + 36.6	2,232 + 13.9	1,731 +300.7	3,987 — 18.9	13,615 + 10.4	30,434 + 16.4
GASOLINE—Gallons						
Stocks, Nov. 21.....	14,566,000	35,345,000	28,783,000	12,005,000	9,006,000	99,705,000
Prod. 11-21 to 11-28..	10,727,000 — 5.7	17,736,000 — 0.8	9,159,000 — 9.5	3,789,000 + 4.1	5,527,000 — 1.0	46,938,000 — 3.4
Ship. 11-21 to 11-28..	7,520,000 — 31.3	15,413,000 — 15.0	8,495,000 — 1.5	3,867,000 + 19.3	5,218,000 + 8.4	40,513,000 — 11.4
Stocks, Nov. 28.....	17,773,000 + 22.0	37,668,000 + 6.6	29,447,000 + 2.3	11,927,000 — 0.7	9,315,000 + 3.4	106,130,000 + 6.4
Ratio Sales to Prod...	70.1%	86.9%	92.8%	102.1%	94.4%	86.3%
KEROSINE—Gallons						
Stocks, Nov. 21.....	9,474,000	13,250,000	2,303,000	12,000	313,000	25,352,000
Prod. 11-21 to 11-28..	1,834,000 + 0.9	1,989,000 — 6.3	1,091,000 — 14.0	18,000 — 53.8	455,000 + 44.4	5,387,000 — 3.2
Ship. 11-21 to 11-28..	1,214,000 — 6.8	1,515,000 — 13.7	1,209,000 — 11.3	14,000 — 62.2	350,000 — 5.9	4,302,000 — 10.9
Stocks, Nov. 28.....	10,094,000 + 6.5	13,724,000 + 3.6	2,185,000 — 5.1	16,000 + 33.3	418,000 + 33.5	26,437,000 + 4.3
Ratio Sales to Prod...	66.2%	76.2%	110.8%	77.8%	76.9%	79.9%
STOVE DISTILLATE—Gallons						
Stocks, Nov. 21.....	4,233,000	7,551,000	677,000	125,000	406,000	12,992,000
Prod. 11-21 to 11-28..	288,000 + 25.2	1,471,000 — 46.2	397,000 +108.9	29,000 — 69.5	8,000 — 46.7	2,193,000 — 32.8
Ship. 11-21 to 11-28..	227,000 — 41.2	898,000 + 5.8	14,000 — 81.6	91,000 +225.0	34,000 — 89.5	1,264,000 — 23.9
Stocks, Nov. 28.....	4,294,000 + 1.4	8,124,000 + 7.6	1,060,000 + 56.6	63,000 — 49.6	380,000 — 6.4	13,921,000 + 7.2
Ratio Sales to Prod...	78.8%	61.0%	3.5%	313.8%	425.0%	57.6%
GAS OIL—Gallons						
Stocks, Nov. 21.....	3,566,000	37,577,000	2,563,000	5,499,000	6,823,000	56,028,000
Prod. 11-21 to 11-28..	772,000 + 2.9	1,056,000 — 43.0	1,223,000 + 68.9	554,000 + 6.5	1,917,000 — 9.1	5,522,000 — 7.3
Ship. 11-21 to 11-28..	1,159,000 + 50.3	1,672,000 — 44.7	451,000 — 41.4	499,000 — 3.5	1,487,000 — 28.1	5,268,000 — 26.3
Stocks, Nov. 28.....	3,179,000 — 10.9	36,961,000 — 1.6	3,335,000 + 30.1	5,554,000 + 1.0	7,253,000 + 6.3	56,282,000 + 0.5
Ratio Sales to Prod...	150.1%	158.3%	36.9%	90.1%	77.6%	95.4%
FUEL OIL—Gallons						
Stocks, Nov. 21.....	27,128,000	48,372,000	69,854,000	19,342,000	15,853,000	180,549,000
Prod. 11-21 to 11-28..	4,498,000 — 10.1	6,868,000 + 22.6	6,615,000 — 3.6	4,415,000 + 12.2	4,441,000 + 5.8	26,837,000 + 4.9
Ship. 11-21 to 11-28..	4,941,000 — 15.2	6,447,000 — 6.7	6,805,000 — 8.0	5,044,000 + 3.4	4,321,000 — 15.0	27,558,000 — 8.5
Stocks, Nov. 28.....	26,685,000 — 1.6	48,793,000 + 0.8	69,664,000 — 0.3	18,713,000 — 3.3	15,973,000 + 0.8	179,828,000 — 0.4
Ratio Sales to Prod...	109.8%	93.9%	102.9%	114.2%	97.3%	102.7%

Gasoline Produced by Various Methods, Week Ended November 28

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	6,103,000	56.9	11,047,000	62.3	6,452,000	70.4	2,960,000	78.1	1,258,000	22.8	27,820,000	59.3
Cracked.....	3,856,000	35.9	5,278,000	29.8	1,788,000	19.5	628,000	16.6	3,116,000	56.4	14,666,000	31.2
Natural.....	768,000	7.2	1,411,000	7.9	919,000	10.1	201,000	5.3	1,153,000	20.8	4,452,000	9.5
Total.....	10,727,000		17,736,000		9,159,000		3,789,000		5,527,000		46,938,000	

+ or — columns are % changed over previous week.

Mid-Continent Gasoline Shipments Drop 5,200,000 Gallons

Staff Special—By Telegraph
TULSA, Dec. 1

GASOLINE stocks were increased 6,400,000 gallons in the week ended Nov. 28 at Mid-Continent refineries reporting weekly to this publication. West Texas was the only group to lower gasoline inventories.

The stock increase was due to a drop of 5,200,000 gallons in shipments while production of gasoline was being reduced only 1,600,000 gallons. West Texas and North Louisiana-Arkansas refiners enjoyed an increase in demand while all others shipped less motor fuel.

Total gasoline stocks at the end of the week were 106,130,000 gallons. This is 1,125,000 gallons higher than stock on the corresponding date last year.

Kerosine stocks were increased 1,000,000 gallons during the week, when shipments dropped 10.9 per cent while

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Nov. 28. Change in stocks figures from Oct. 31.

GASOLINE

	Gallons
Production	187,107,000
Shipments	179,913,000
Net change in stocks	+7,194,000
Ratio sales to production	96.2%

KEROSINE

	Gallons
Production	22,745,000
Shipments	20,771,000
Net change in stocks	+1,974,000
Ratio sales to production	91.3%

STOVE DISTILLATE

	Gallons
Production	8,066,000
Shipments	5,613,000
Net change in stocks	+2,453,000
Ratio sales to production	69.6%

GAS OIL

	Gallons
Production	24,227,000
Shipments	27,445,000
Net change in stocks	—3,218,000
Ratio sales to production	113.3%

FUEL OIL

	Gallons
Production	105,507,000
Shipments	112,375,000
Net change in stocks	—6,868,000
Ratio sales to production	106.5%

production was being cut only 3.2 per cent. Distillate stocks also increased although refiners cut their output a third. Shipments were down 23.9 per cent.

Stocks of fuel oil were reduced 700,000 gallons but gas oil stocks increased 200,000 gallons.

State Association Men At A.P.I. Meeting

CHICAGO, Nov. 28.—Numerous state marketer association officers were present at the American Petroleum Institute meeting this week. Among them were:

Max L. Wickersham, secretary, Indiana Petroleum Marketers Association; Herbert L. Clay, secretary, Kentucky Oil Men's Association; George S. Allee, president, Missouri Oil Men's Association; Lew W. Collins, secretary, Tennessee Oil Men's Association; Sam Hurd, secretary, Indiana Code Bureau; H. S. Woodfall, secretary, Illinois Code Committee.

H. H. Ragle, president, Michigan Oil Men's Association; Charles Sutherland, secretary, Nebraska Independent Oil Men's Association J. M. Cushman, president, Iowa Petroleum Association; M. L. Long, secretary of the Iowa Association; E. E. Hadlick, secretary, Northwest Petroleum Association, and G. A. Primm, secretary, Illinois Petroleum Marketers Association.

Foreign Opportunities

Reserved information may be obtained from the Bureau of Foreign and Domestic Commerce, Washington, and its district and cooperative offices by duly registered firms and individuals upon written request by opportunity number. The Bureau does not furnish credit ratings or assume responsibility as to the standing of foreign inquirers; the usual precautions should be taken in all cases, and where no references are offered it does not necessarily imply that satisfactory references could not be given. Correspondence may be in English unless otherwise stated.

48446.—**Utah asphalt,** Hamburg, Germany, agency.

48447.—**Painters' naphtha,** 15,000 kilos monthly, Laren, Netherlands, purchase.

48448.—**Motor oils,** Vienna, Austria, purchase and agency.

48540.—**Lubricating oils and greases,** Sao Paulo, Brazil, agency.

48559.—**Paraffin and lubricating oils,** Buenos Aires, Argentina, agency.

48606.—**Oils, gasoline, kerosine and greases,** Santa Marta, Colombia, purchase.

48678.—**Lubricating and cylinder oils,** bright stocks, Fiume, Italy, agency.

48680.—**Lubricating, industrial fuel, and gas oils,** Berlin, Germany, agency.

48697.—**Lubricating oils,** Prague, Czechoslovakia, agency.

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MOTOR OIL

Refinery - Tank Wagon Markets

Foreign Activity Encourages Export Trade; Domestic Markets Continue Quiet

CLEVELAND, Dec. 2

ACTIVITY in export markets the last week of November greatly outshone any developments in domestic markets. Foreign buyers purchased refined oils and wax and sought additional large quantities of these products.

Domestic markets for the most part were quiet. Inclement weather over most of the country hampered gasoline activity, and at the same time low temperatures had not prevailed sufficiently long to stimulate open market activity in the burning oils.

Featuring the export market at the Gulf was the order placed by a Belgian account, with an American exporter, for a cargo of 64-66, 375 end point gasoline at 6.50 cents to be lifted in January. The transaction was significant to the export trade in that it quieted a lot of rumors about substantially lower prices originating on the other side.

A French buyer entered an inquiry for a mixed cargo of approximately 65,000 barrels. Other European buyers also were said to be ready to enter the market. A Japanese buyer inquired on the west coast for several cargoes of U. S. Motor gasoline, indicating it wanted fairly prompt shipment, and also indicated it would require approximately 6,000,000 gallons of gasoline a month over 1931.

Foreign buyers also were active in wax markets. The Spanish Monopoly's inquiry for a large quantity of fully refined wax was still in the market and buyers of white crude scale were more active than they have been for several months.

Gasoline prices receded in practically all domestic markets except Pennsylvania. Shipments from east coast plants were holding up well, according to reports, but competition sent the price at New York harbor 0.25-cent lower and proportionate losses were recorded in other districts.

Gasoline shipments were lower from middle western refineries. Stocks of this commodity rose 6,400,000 gallons at Mid-Continent plants reporting to this publication.

Low cold test fuel oils and lubricating oils were fairly active in most markets. Orders against contracts apparently were taking care of the requirements of most jobbers, however, as open market buying showed only a nominal increase.

Chicago Market Generally Quiet

Staff Special
CHICAGO, Nov. 29

THE Chicago resale market passed the last week in November with little of outstanding interest occurring and few changes noticeable in spot prices. Furnace oils were the most active products with the demand for gasolines at a minimum.

Subnormal temperatures prevailed over practically all of the middle west and while this was a help to the burner oil trade, it kept jobbers from taking much interest in the gasoline market. Sellers generally reported gasoline demand was practically at a standstill.

Four companies bid for the gasoline business of the Chicago postoffice for the first quarter of 1931, amounting to about 300,000 gallons of U. S. Motor specification goods. All bids were based on the tank car market on date of shipment, as shown in the Chicago Journal of Commerce, with 0.5 cent a gallon allowed for handling.

The bids were, 0.125 cent below average tank car price, with a maximum of 5.25 cents; average tank car, with maximum of 5.23 cents; average tank car, with maximum of 6.50 cents; and low tank car price, with maximum of 4.75 cents. Two companies also bid on a flat rate basis. One bid 5 cents flat over the three months period and the other bid 5.75 cents for the first two months and 6 cents for the third month.

Current quotations for U. S. Motor covered a wide range as the low side of the market moved down and a number of refiners made no changes in their quotations. At the end of the week, quotations for Motor ranged from 4.25 to 5.25 cents, with sales generally reported at 4.375 to 4.75 cents. The bulk of sales reported earlier in the week were at 4.50 to 4.75 cents.

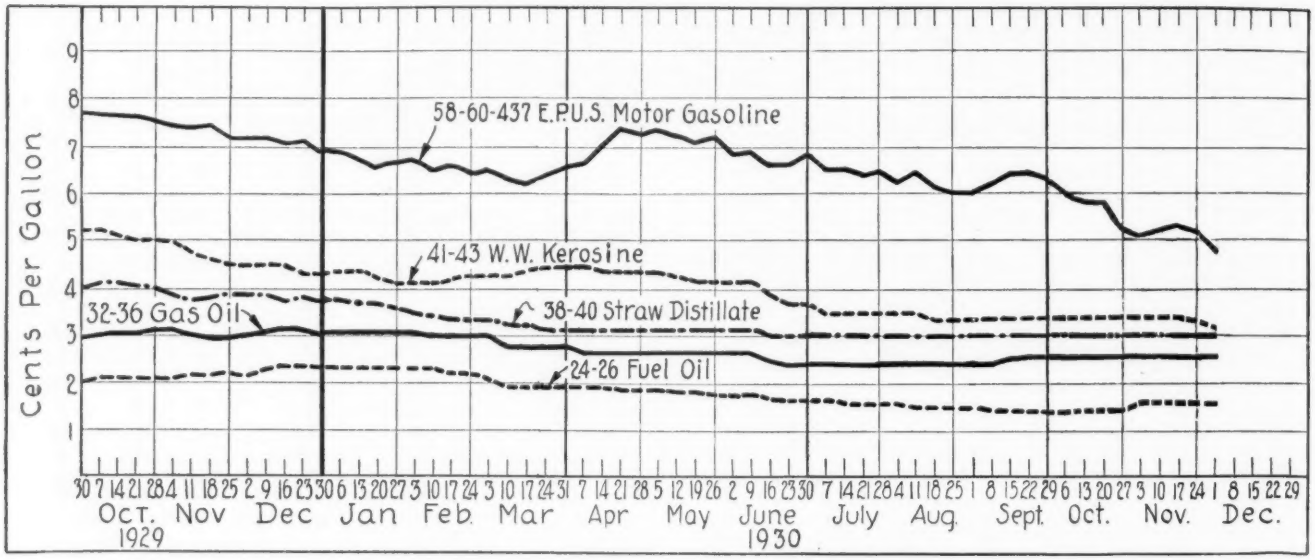
According to Chicago sellers, there was practically no difference in the prices of the various refining districts. Marketers generally said they could buy U. S. Motor for resale in either Oklahoma or North Texas at 4.25 cents, with some gasoline available at 4.125 cents. Some Kansas Motor was offered in this territory on a basis of 4.125 to 4.25 cents f.o.b. Group 3. On the other hand, most refiners asked at least 4.375 cents for resale and did some business at this and slightly higher prices.

A few Oklahoma and Texas refiners offered U. S. Motor direct to jobbers at 4.375 cents, but most of them were asking higher prices. Refiners in the central states area generally quoted Motor at 4.50 to 4.75 cents.

The demand for high test and antiknock gasolines was better than for the U. S. Motor grade, in the opinion of most sellers, although this demand was not heavy enough to keep prices from slipping a bit.

Tank wagon distributors of distillate and zero gas and fuel oils reported a good demand for these products from home burner owners. An improvement also was noted in tank car buying of the zero oils, but as yet it has been confined mostly to commitments against contracts. Most sellers said, however, that if the cold weather continued for another week there would be considerable improvement in buying on the open market. Prices

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P.U.S. Motor Gasoline
41-43 W.W. Kerosine
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Oct. Nov Dec Jan Feb Mar Apr May June July Aug. Sept. Oct. Nov. Dec.
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

of gas and fuel oils were unchanged over the week.

Cold, snowy weather is in prospect for most of the Standard of Indiana territory, especially the northern portions, at the beginning and again at the end of next week; with milder weather in between.

Marathon Oil Co. Buys Refinery, Stations

TULSA, Nov. 28.—Purchase of a refinery and two marketing systems, subject to the usual title examination, by the Marathon Oil Co., was announced by Walter W. Fleming vice president and general manager. The Marathon is a subsidiary of the Mid-Kansas Oil & Gas Co. and succeeded to the refining and marketing properties originally owned by the Transcontinental.

The refinery is the Del Rio Refining Co.'s skimming plant at Del Rio, Texas. It was owned by J. B. Wrather, Tracy Cowell and R. P. Humes. It has capacity of 3500 barrels daily. The Eagle Distributing Co., owned by the same interests and serving at the outlet for the Del Rio's products, also was purchased.

The other marketing system purchased was the Three D. Products system, operating in central Texas. It was owned by A. B. Wharton, Jr., Tracy Cowell and R. P. Humes.

Around 165 station outlets in north and central Texas are added to the Marathon system by the purchases.

Refinery Waste Committee to Make Survey

NEW YORK—The committee on disposal of refinery wastes, of the American Petroleum Institute, has been authorized to make, through questionnaires, an annual survey of refinery properties in this country and to report on disposal conditions. It is expected the survey will determine whether local disposal facilities are adequate and will permit study and correction of conditions where difficulty is encountered.

A. S. Russell, of the Standard Oil Co. of California, San Francisco, is chairman of the committee, which is a unit of the institute's division of refining.

May Enlarge Refinery

By Telegraph

TULSA, Dec. 2.—Plans are under consideration by the Ohio Oil Co. for an increase in size of the Marathon Oil plant at Bristow. If approval is given a lubricating plant will be built and the daily throughput capacity enlarged. It is a skimming and cracking plant of 5000 barrels capacity.

Shipments From Southern California

LOS ANGELES, Nov. 27

Shipment of bulk petroleum from Southern California ports to Foreign and Atlantic Seaboard ports for week ended Nov. 22 totaled 1,066,822 barrels as compared with 991,316 barrels shipped to these same ports for the previous week. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Kerosine	Gas-Oil	Fuel	Total
Pacific For.	55,383	186,300	12,828	37,248	.....	336,827	628,586
Atlantic Dom.	.....	265,620	78,294	94,322	.....	.....	438,236
Atlantic For.	.....	.....	.....	.....	.....	.....	.....

Prices 10 Years Ago

Nov. 29, 1920

	Oklahoma	Penna.
58-60 U. S. Motor.....	19.00-19.50c	23.50-23.75c
80-84 Natural	20.00-21.00c	.....
Kerosine (42-43 Okla.; 47 w. w. Pa.)	8.50-9.00c	14.00-14.50c
Fuel Oil (24-26 Okla.; 36-40 Pa.)	$2.00-$2.10	8.50-9.00c
Crude (Okla. 35-35.9)	$3.50	$6.10
Chicago tank wagon (no state tax).....		27.00c

Prices A Year Ago

Dec. 2, 1929

	Oklahoma	Penna.
58-60 U. S. Motor.....	7.2219c	8.125-9.00c
Grade A Natural	6.75-6.875c	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)....	4.25-4.75c	7.00-7.50c
Fuel Oil (Okla. 24-26; Pa. 36-40).....	$0.85-$0.95	4.875-5.25c
Crude (Okla. 35-35.9)	$1.40	$3.05
Chicago tank wagon (including 3c tax).....		17.00c

Mid-Continent Refinery Markets

Gasoline Prices Down as Demand Recedes

Staff Special

TULSA, Nov. 29

MID-CONTINENT gasoline prices moved lower the last week of November as winter descended on the middle west. The anticipated pre-Thanksgiving demand failed to come up to expectations, and the uncertainty of the crude and tank wagon price structures continued uppermost in the minds of both buyers and sellers.

A wide range of quotations existed in Oklahoma for 58-60 U. S. Motor gasoline. Before the end of the week a few quotations were reported at 4.25 to 4.375 cents for resale, but the majority of quotations for spot business direct to jobbers were 4.50 cents and up. A few refiners continued to quote 5 cents and up for spot U. S. Motor, but did little business. Most of their shipments were against contracts, and several of them said their contract prices were netting them under 5 cents a gallon.

Seldom does the end of the month arrive without some sizable inquiries for quotations for shipment over the next month, but apparently this month end will prove an exception. Jobbers appeared uninterested in either spot or over-the-month quotations. With such a condition existing there was a little speculative selling late in the week by two or three brokers. One was reported to have sold some gasoline at 4.125 cents a gallon, while another asked 4.125 and 4.25 cents. The sales were admittedly short ones, the brokers anticipating their ability to buy at under those figures by the time shipping instructions are furnished.

Several refiners in the Wichita Falls district continued to quote 4.75 cents for U. S. Motor, but failed to do any volume of business this week. Their strongest competition came from the Panhandle and West Texas districts. One sales manager said that there apparently was little spot business at any price. He said that as a usual thing when his company quoted a price, the prospect, if he really wanted gasoline, would reply with a counter-offer, but quotations failed to obtain any response whatever this week.

The price range for U. S. Motor direct to jobbers in north Texas district went to 4.50 cents before the end of the week, and to 4.375 cents in West Texas. Sales to brokers, both for prompt and deferred shipment, were reported at 0.125 to 0.375 cent under that figure.

Kansas, Louisiana and Arkansas refiners experienced the smallest price fluctuations during the week. These districts, while enjoying excellent weather during the holiday, nevertheless were affected by the inclement weather which began spreading over the middle west prior to the holiday, and at the end of the week were having an abundance of cold, rainy weather.

Natural gasolines moved into the usual end-of-the-month lull, when manufacturers sacrificed price to clear up the month's production, and buyers confined themselves primarily to asking for quotations for next month. The result was a drop in price for all grades, with grades BB and C suffering the greatest loss.

The colder weather increased production of grades BB and C at the expense of grades A and AA. This increase came at a time when the West Virginia district was reported to be burdened with the lower grades, and also at a time when two or three of the major operators in the Mid-Continent, due to a lighter demand from their regular outlets, had their hands tied as far as buying the surplus gasoline was concerned.

Demand for grade AA resisted the downward trend in prices more than the other grades primarily because of a comparatively good demand as compared with supply. One large manufacturer said he had experienced a good demand for grade AA, and the situation was fairly good in both north Texas and Oklahoma. The gasoline located in the Panhandle and West Texas, where freight rates are higher, cut into the picture sufficiently to influence prices.

While the prevailing quotations Nov. 29 were 4.25 cents in both Oklahoma and north Texas for grade AA, some grade AA located in the Panhandle was moved at 4 cents on north Texas and Oklahoma freight rates. These sales were used by large buyers in an effort to influence prices in other districts by the first of the month, when some new buying either at a flat price or based on market date of shipment, probably will be done.

While cold weather slowed down the gasoline demand, it stimulated distillates and gas oils. Several refiners reported that before the end of the week they had noted a good increase in their heating distillate orders. The new buying, however, had not developed, the bulk of orders being applied against contracts.

The mild weather had slowed up the taking on contracts, but jobbers began sending in more instructions toward the end of the month. It probably will take at least one more cold spell to cause any noticeable increase in spot buying.

The same condition prevailed with reference to the zero cold test gas oils, refiners said. Prices remained unchanged.

The ordinary cold test gas oils were freely offered but prices did not fluctuate.

High gravity fuel oils were in excellent demand. The few refiners who make those oils reported their stocks were low and buyers said it was difficult to obtain any oil for prompt shipment, unless the orders were applied against existing contracts.

Neutral oil prices were unchanged. Demand was reported light by most refiners. The one possible exception was a refiner who makes a zero cold test neutral oil. He said the demand was good and he obtained from 0.50 to 1 cent premium for his oils.

Bright stock demand also was slow at unchanged prices. Competition continued to be felt keenly from Pennsylvania refiners. Wax demand was light but prices were unchanged. One or two refiners reported they had curtailed wax production considerably the past few weeks.

Chestnut & Smith Sell Texas Properties

TULSA, Nov. 29.—Ratification of the sale of the corporation's holdings in Texas will be asked of the stockholders of the Chestnut & Smith Corp. of Tulsa within a few days. The Lone Star Gas Co. of Dallas, has offered to buy the company's natural gasoline plants and holdings in the Ranger and Breckenridge districts for about $4,000,000. The sale is expected to be consummated early in 1931.

Chestnut & Smith will retain its Oklahoma properties consisting of three plants in the Glennpool district. The sale, it was said, will place the company in a better cash position for future developments and possible expansion.

Pittsburgh Equitable Meter Co., Pittsburgh, Pa., manufacturer of gasoline, oil and gas meters and pressure regulating equipment, has opened a branch factory at Los Angeles. A complete line of its products will be handled there and any necessary repairs to equipment installed on the Pacific Coast will be made there. The Los Angeles factory is at 1918 East 7th St.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect December 1

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	4.50 –5.00	(See note)	4.50 –5.00	(See note)	.....
**Oklahoma	4.375–4.875	.....	4.375–4.875	.....	.....
Kansas	4.875–5.375	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	5.6000	(Wt. Avg.)	Kansas only.
North Texas	4.375–4.75	.....	4.375–4.75	.....	.....
West Texas	4.375 –4.625	.....	4.375–4.625	.....	.....
Louisiana-Arkansas	4.75 –5.00	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	5.25 –5.50	.....	State or differential haul.
Indiana-Illinois	4.50 –4.75	.....	..... *	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

**Price of this 58-60, 437 e.p. gasoline, which in most instances meets full U. S. Motor gasoline specifications, represents quotations and sales prices of four refiners having 7% of the refining capacity of Oklahoma. These four refiners are not reporting their prices for use in compiling weighted averages on U. S. Motor gasoline.

Note: No sales reported for the gasoline marked "see note"; prices shown represent majority of quotations only.

Chicago Resale Market

CHICAGO, Nov. 29

THE Chicago market was quiet last week and spot gasoline prices were lower. On the other hand, colder weather brought more life to the furnace oil market. Spot sales of U. S. Motor gasoline were reported mostly at 4.375 to 4.75 cents at the end of the week, with a few at 4.25 cents and quotations ranging up to 5.25 cents. High test and anti-knock gasolines generally were reported in better demand than the U. S. Motor grade, although prices for these grades also moved lower.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts, such as North and West Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices Dec. 1	Prices Nov. 24	Prices Nov. 17
58-60 U. S. Motor, 437 e.p.	4.375– 4.75	4.50 – 4.75	4.50 – 4.875
†56-62 400-437 e.p. anti-knock gasoline	5.00 – 6.25	5.375– 6.50	5.375– 6.50
60-62 437 e.p. gasoline	4.50 – 4.75	4.625– 4.875	4.625– 4.875
60-62 400 e.p. gasoline	4.625– 5.00	4.75 – 5.00	4.875– 5.25
64-66 375 e.p. gasoline	5.50 – 5.75	5.50 – 5.75	5.625– 5.875
68-70 350-360 e.p. gasoline	6.00 – 6.50	6.00 – 6.50	6.25 – 6.50
*Domestic Aviation Gasoline	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
41-43 w.w. kerosine	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
42-44 w.w. kerosine	3.25 – 3.625	3.25 – 3.625	3.25 – 3.625
38-40 straw distillate	2.875– 3.00	2.875– 3.00	2.875– 3.00
32-36 ordinary dark gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 dark zero gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
32-36 straw zero gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
28-30 zero fuel oil (per bbl.)	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
28-30 fuel oil (per bbl.)	$0.80 –$0.85	$0.80 –$0.85	$0.80 –$0.85
24-26 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
18-22 fuel oil, low sulfur (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
18-22 fuel oil, high sulfur zero (per bbl.)	$0.525–$0.60	$0.525–$0.575	$0.525–$0.575
14-16 fuel oil (per bbl.)	$0.425–$0.475	$0.425–$0.475	$0.425–$0.475

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Over 45% benzol equivalent. Prices represent quotations and sales.

Weighted Average Prices

OKLAHOMA

	Dec. 1		Nov. 24		Nov. 17	
	No. of Cars	Price	No. of Cars	Price	No. of Cars	Price
58-60 U. S. Motor, 437 e.p.	..	4.50 –5.00 (See note)	..	4.625–5.25 (See note)	2	5.2500
*58-60 437 e.p. gasoline	..	4.375–4.875	..	4.50– 5.00	..	4.625–5.00
60-62 437 e.p. gasoline	2	4.6250	..	4.75– 5.25 (See note)	..	5.00 –5.50 (See note)
60-62 400 e.p. gasoline	..	5.25 –5.50 (See note)	1	5.5000	..	5.50 –5.75 (See note)
64-66 375 e.p. gasoline	..	5.50 –6.25 (See note)	..	5.75– 6.25 (See note)	..	5.75 –6.00 (See note)

KANSAS

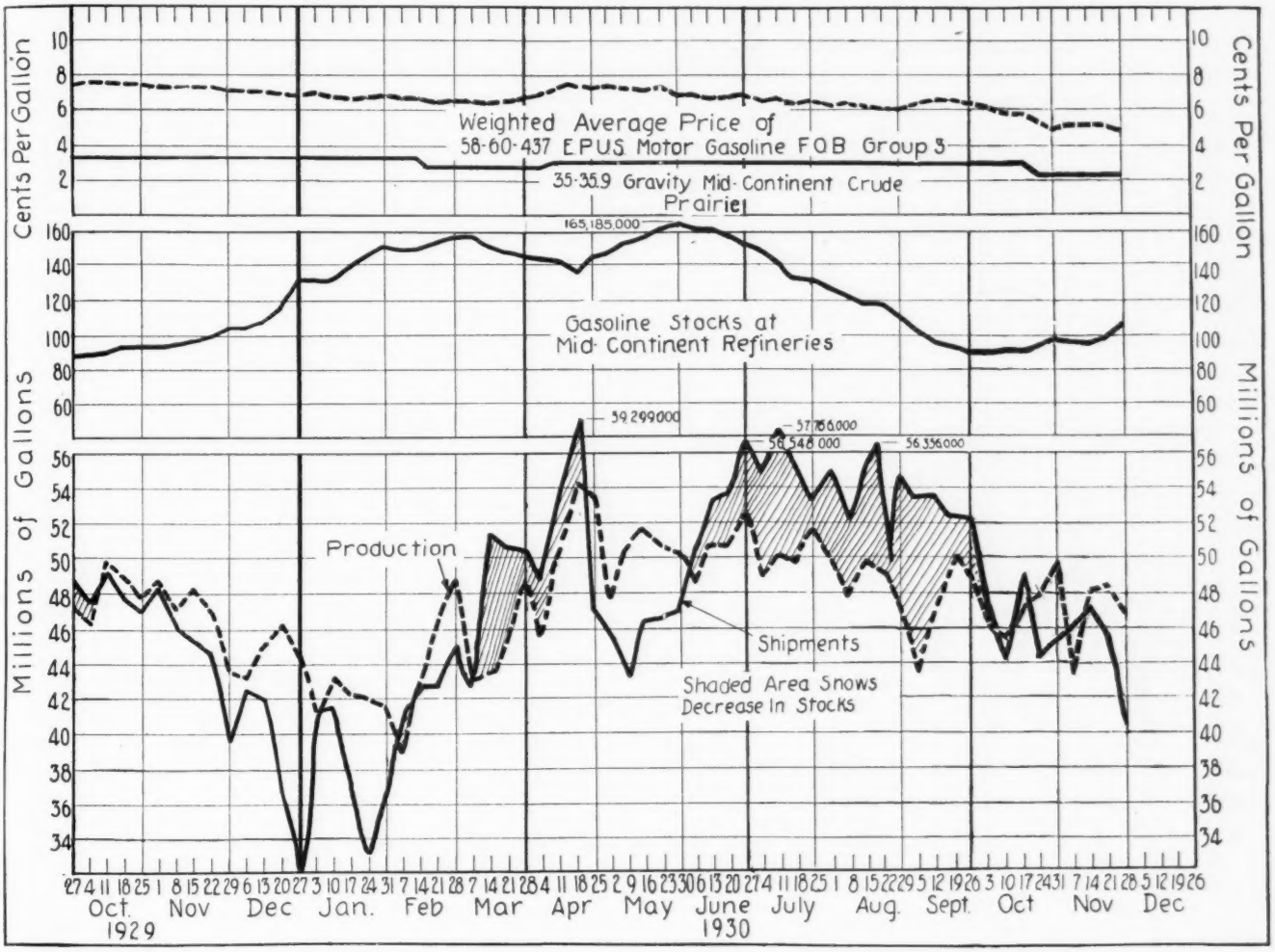
	Dec. 1		Nov. 24		Nov. 17	
	No. of cars	Price	No. of cars	Price	No. of Cars	Price
58-60 U. S. Motor, 437 e.p.	15	5.6000	3	5.7500	9	5.5278

Note: No sales reported for the gasoline marked "see note" on the dates so marked; prices shown on such dates represent majority of quotations only.

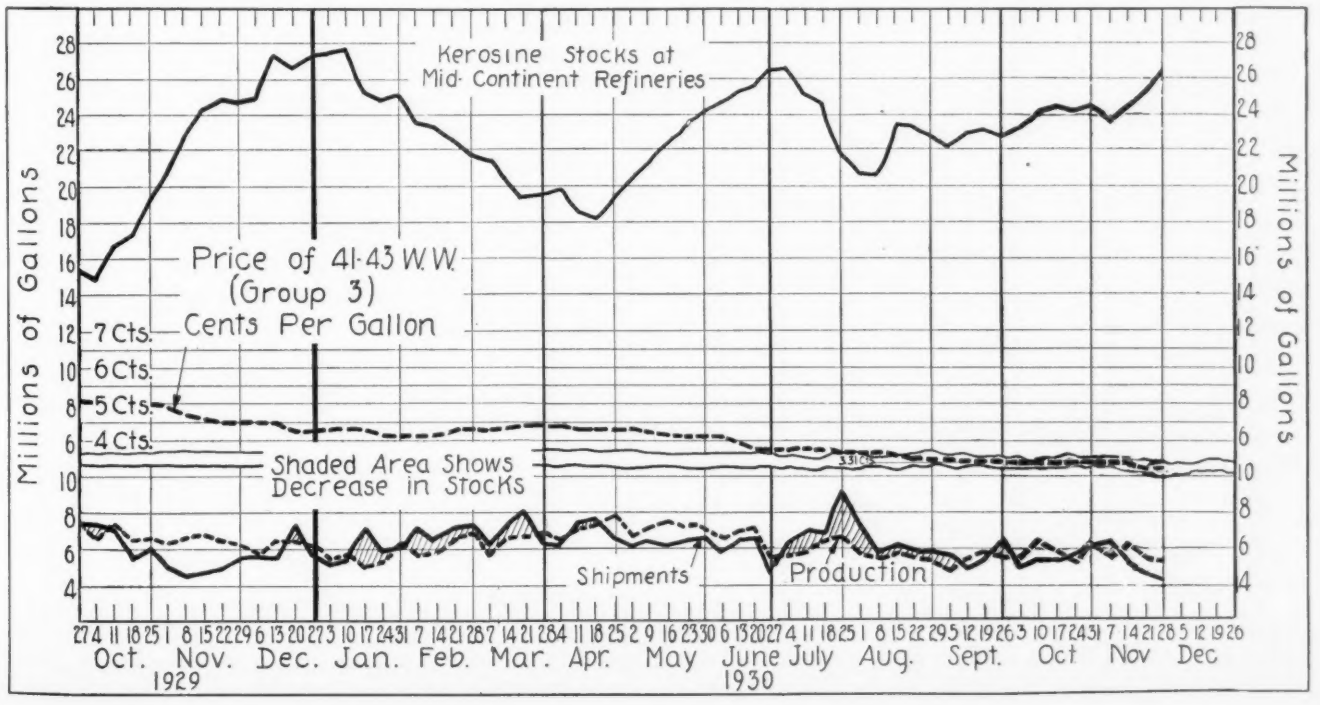
*Prices of this 58-60, 437 e. p. gasoline, which in most instances meets full U. S. Motor gasoline specifications, represents quotations and sales prices of four refiners having 7% of the refining capacity of Oklahoma. These four refiners are not reporting their prices for use in compiling weighted averages on U. S. Motor gasoline.

Barometer of Mid-Continent Refinery Market—Week Ending November 28

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 82



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Dec. 1	Prices Nov. 24	Prices Nov. 17
48-50 450 e.p. naphtha...	4.75	4.875– 5.00	4.875– 5.00
50-52 450 e.p. naphtha...	4.75	4.875– 5.00	4.875– 5.00
56-58 450 e.p. gasoline...	4.50 – 4.75	4.625– 5.00	4.625– 5.00
58-60 450 e.p. gasoline...	4.50 – 4.75	4.625– 5.00	4.625– 5.00
64-66 390 e.p. gasoline...	5.50 – 5.75	5.50 – 6.00	6.25 – 6.50
68-70 350-360 e.p. gasoline	6.00 – 6.25	6.25 – 6.50	6.50 – 6.75
‡Domestic Aviation Gasoline.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
54-56 Naphtha.....	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00
58-60 U.S. Motor 437 e.p.	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
60-62 400-410 e.p. gasoline	6.50 – 7.00	6.625– 7.25	6.625– 7.25
64-66 390 e.p. gasoline....	7.125– 7.75	7.125– 7.75	7.25 – 7.75
68-70 350-360 e.p.....	8.00 – 8.75	8.00 – 8.75	8.00 – 8.75

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point.....	9.00	9.00	9.00

KANSAS (F. o. b. refinery Kansas destination)

60-62 437 e.p. gasoline....	5.50 – 5.75	5.50 – 5.75	5.75 – 6.00
60-62 400 e.p. gasoline....	5.75 – 6.25	5.75 – 6.25	6.00 – 6.25
64-66 375 e.p. gasoline....	6.50	6.50	6.50 – 6.75

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline....	4.25	4.50	4.50
58-60 450 e.p. gasoline....	4.25	4.50	4.50
58-60 U.S. Motor 437 e.p.	4.375– 4.75	4.625– 4.75	4.625– 4.75
60-62 400 e.p. gasoline....	5.00	5.00 – 5.25	5.00 – 5.25
64-66 390 e.p. gasoline....	5.25	5.25 – 5.50	5.25 – 5.50
64-66 375 e.p. gasoline....	5.50	5.50 – 5.75	5.50 – 5.75
68-70 350-360 e.p. gasoline	6.00	6.25 – 6.50	6.25 – 6.50

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	4.25	4.50	4.50
58-60 437 e.p. gasoline....	4.25	4.50	4.50
58-60 U.S. Motor 437 e.p. gasoline.....	4.375– 4.625	4.625– 4.75	4.625– 4.75

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p	5.50	5.50	5.50

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	5.25	5.25	5.25

CALIFORNIA (3c tax to be added to California gasoline prices if used n state.)

54-58 U.S. Motor 437 e.p.	8.00 –11.00	8.75 –11.50	8.50 –11.00
54-58 U.S. Motor, for outside state shipment....	7.50 – 8.50	7.50 – 8.50	7.25 – 8.50
58-61 375-400 e.p. gasoline	11.00 –12.00	11.00 –12.00	11.00 –12.00
42-45 Engine Distillate 445-480 e.p.....	8.00 – 9.00	8.50 – 9.75	8.50 – 9.50

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	4.00 – 4.25	4.375– 4.50	4.50
Grade A, 72-79.9, 90% Recovery.....	4.25 – 4.50	4.625– 4.75	4.75
Grade BB, 84-92, 85% Recovery.....	3.75 – 4.00	4.00	4.50
Grade B, 76-83.9, 85% Recovery.....	4.00 – 4.125	4.25	4.50
Grade C, 80-92, 78% Recovery.....	3.75 – 4.00	4.00	4.50

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery.....	4.00 – 4.25	4.375– 4.50	4.50
Grade A, 72-79.9, 90% Recovery.....	4.25 – 4.50	4.625– 4.75	4.75
Grade BB, 84-92, 85% Recovery.....	3.75 – 4.00	4.00	4.50
Grade B, 76-83.9, 85% Recovery.....	4.00 – 4.125	4.25	4.50
Grade C, 80-92, 78% Recovery.....	3.75 – 4.00	4.00	4.50

NORTH LOUISIANA (F. o. b. Monroe District)

	Prices Dec. 1	Prices Nov. 24	Prices Nov. 17
Grade AA.....	†4.25	†4.50	†4.75
Grade BB.....	†4.00	†4.25	†4.75
Grade C.....	†4.00	†4.25	†4.75

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	6.00 – 7.00	6.50 – 7.25	6.50 – 7.25

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w. w. kerosine.....	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
46 w.w. kerosine.....	5.00 – 5.50	5.00 – 5.50	5.00 – 5.50
47 w. w. kerosine.....	5.25 – 5.75	5.25 – 5.75	5.25 – 5.75
300 mineral seal.....	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w. w. kerosine.....	3.125– 3.25	3.125– 3.375	3.125– 3.50
42-44 w. w. kerosine.....	3.25 – 3.50	3.50 – 4.00	3.50 – 4.00

KANSAS (F. o. b. refinery Kansas destination)

41-43 w. w. kerosine.....	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00
42-44 w. w. kerosine.....	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w. w. kerosine.....	3.00	3.00	3.00
41-43 w. w. kerosine.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00
42-44 w. w. kerosine.....	4.25	4.25	4.25

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00

CALIFORNIA (F. o. b. California refineries)

38-40 w. w. kerosine.....	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.		(Viscosity at 70° F.)	
200 No. 3 Assoc. Filt.....	16.75 –18.00	16.75 –18.00	16.75 –18.00
180 No. 3 Assoc. Filt.....	14.00 –15.00	14.00 –15.00	14.00 –15.00
150 No. 3 Assoc. Filt.....	10.50 –12.00	10.75 –12.00	10.75 –12.00
		(Non Viscous)	
34 Grav. 330-340 Flash...	5.50 – 6.50	5.50 – 6.50	5.50 – 6.50

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color		(Viscosity at 100° F.)	
100—No. 2.....	5.50	5.50	5.50
150—No. 3.....	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
150—No. 4.....	6.50	6.50	6.50
180—No. 3.....	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 4.....	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
180—No. 5.....	7.50	7.50	7.50
200—No. 3.....	9.75 –10.00	9.75 –10.00	9.75 –10.00
200—No. 4.....	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
200—No. 5.....	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
220—No. 3.....	11.50	11.50	11.50
220—No. 4.....	11.00	11.00	11.00
220—No. 5.....	10.00	10.00	10.00
240—No. 3.....	13.50	13.50	13.50
240—No. 4.....	12.50	12.50	12.50
240—No. 5.....	11.50	11.50	11.50
280—No. 3.....	15.50	15.50	15.50
280—No. 4.....	14.50	14.50	14.50
80 —No. 5.....	13.50	13.50	13.50

†Prices nominal ††Only one refiner quoting *Quotations only

****Represents Both Sales and Quotations.**

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices Dec. 1	Prices Nov. 24	Prices Nov. 17
	(Viscosity at 100° F., pour test 0)		
100—No. 2 Pale	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
200—No. 3 Pale	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 3 Pale	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
500—No. 3½ Pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
750—No. 4 Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
1200—No. 4 Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
2000—No. 4 5 Pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
300—No. 5½ Red Oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500—No. 6 Red Oil	9.75 –10.25	9.75 –10.25	9.75 –10.25
750—No. 6 Red Oil	11.25 –11.75	11.25 –11.75	11.25 –11.75
1200—No. 5-6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
2000—No. 6 Plus Red Oil	15.50 –16.00	15.50 –16.00	15.50 –16.00

‡CALIFORNIA (F. o. b. California refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Bright stock prices represent quotations to domestic jobbers only).

190-200 Vis. D at 210° Brt St.	25.00	25.00	25.00
150-160 Vis. D at 210° Brt. St., 0-10 cold test	20.00 –21.00	20.00 –21.00	20.00 –21.00
150-160 Vis. D at 210° Brt. St., 10-25 cold test	19.00 –20.00	19.00 –20.00	19.00 –20.00
150-160 Vis. D Brt. Stock, 25-40 cold test	17.00 –19.00	17.00 –19.00	18.00 –19.00
150-160 Vis. E 210° Brt. St.	16.00 –17.00	16.00 –17.00	17.00 –19.00
600 St. Ref. Olive Green	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
600 St. Ref. Dark Green	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	8.75 – 9.25	9.00 – 9.50	9.00 – 9.50
650 Steam Refined	13.75 –15.00	14.00 –16.00	14.00 –16.00
600 Flash	16.00 –16.50	16.00 –18.00	16.00 –18.00
630 Flash	24.00 –25.00	24.00 –25.00	24.00 –25.00
600 Warren E	15.00 –16.00	†15.00 –17.00	†15.00 –17.00
600 Oil City E	14.50 –15.00	†15.00 –15.50	†15.00 –16.00
600 D Filtered	18.00 –19.00	18.00 –19.00	18.50 –19.50
Cold Test Stock, 140-150 vis. at 210°, 540-550 flash.			
No. 8 color, below 35 pour test	20.00 –23.50	20.00 –23.50	20.50 –23.50
No. 8 color, above 35 pour test	18.00 –20.00	18.00 –20.00	18.50 –20.00
No. 6-6½ color diluted, 40-50 pour test	†17.00 –20.00	†17.00 –21.00	†17.50 –21.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	2.25 – 2.375	2.15 – 2.25	2.15 – 2.25
124-126 white crude scale, a.m.p.	2.25 – 2.375	2.18 – 2.25	2.18 – 2.25

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	2.00	2.00	2.00 – 2.125

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	3.375– 3.75	3.375– 3.75	3.50 – 3.75
30-34 fuel oil	3.375– 3.625	3.50 – 3.75	3.50 – 3.75
28-32 fuel oil	3.375– 3.625	3.50 – 3.75	3.50 – 3.75

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Dec. 1	Prices Nov. 24	Prices Nov. 17
38-40 straw distillate	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
36-38 straw distillate	2.875– 3.00	2.875– 3.00	2.875– 3.00
32-36 straw gas oil	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
32-36 straw gas oil zero	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
32-36 dark gas oil	2.125– 2.375	2.125– 2.375	2.125– 2.375
32-36 dark gas oil zero	2.625– 2.875	2.625– 2.875	2.625– 2.875
28-30 zero fuel oil(per bbl.)	$0.85 – 0.95	$0.85 – 0.95	$0.85 – 0.95
28-30 fuel oil (per bbl.)	$0.80 – 0.825	$0.80 – 0.825	$0.80 – 0.825
26-28 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
24-26 fuel oil (per bbl.)	$0.65 – 0.70	$0.65 – 0.70	$0.65 – 0.70
22-26 fuel oil (per bbl.)	$0.55 – 0.60	$0.55 – 0.60	$0.55 – 0.60
18-22 fuel oil (per bbl.)	$0.475– 0.525	$0.475– 0.525	$0.475– 0.525
16-20 fuel oil (per bbl.)	$0.425– 0.475	$0.425– 0.475	$0.425– 0.475
14-16 fuel oil (per bbl.)	$0.40 – 0.45	$0.40 – 0.45	$0.40 – 0.45

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
36-38 straw distillate	3.00	3.00	3.00
32-36 straw gas oil	3.00	3.00	3.00
18-22 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
10-14 fuel oil (per bbl.)	$0.55 – 0.65	$0.55 – 0.65	$0.55 – 0.65

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	2.875– 3.00	2.875– 3.00	3.00
38-40 p.w.treated distillate	3.125– 3.25	3.125– 3.25	3.125– 3.25
32-36 gas oil, cracked	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
32-36 St. reduced gas oil	2.125– 2.375	2.125– 2.375	2.125– 2.375
24-26 fuel oil (per bbl.)	$0.50	$0.50 –$0.55	$0.50 –$0.55
20-24 fuel oil (per bbl.)	$0.45	$0.45 –$0.50	$0.45 –$0.50
18-22 fuel oil (per bbl.)	$0.40	$0.40 –$0.45	$0.40 –$0.45

****WEST TEXAS** (F. o. b. West Texas refinery, or unrestricted shipment)

34-38 gas oil	2.125– 2.375	2.25 – 2.50	2.25 – 2.50
30-32 gas oil	1.875– 2.125	1.875– 2.125	1.875– 2.125
28-30 zero gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
18-22 fuel oil (per bbl.)	$0.50 –$0.60	$0.50 –$0.60	$0.50 –$0.60

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	*3.25	*3.25	*3.25
32-36 gas oil, straw	*3.25	*3.25	*3.25
14-16 fuel oil (per bbl.)	$0.75 –$0.85	$0.75 –$0.85	$0.75 –$0.85

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.25	3.25	3.25
32-36 dark gas oil	3.25	3.25	3.25
28-30 gas oil	3.00	3.00	3.00
20-24 fuel oil (per bbl.)	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
9-12 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.35 –$0.60	$0.35 –$0.60	$0.35 –$0.60
14-18 Bunker oil (per bbl.)	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
30-34 gas oil (per bbl.)	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05
27 Plus Diesel oil (per bbl.)	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50	7.50	7.50
Cream White	6.50	6.50	6.50
Light Amber	3.375– 3.625	3.375– 3.625	3.375– 3.625
Amber	3.125– 3.375	3.125– 3.375	3.125– 3.375
Red	2.875– 3.00	2.875– 3.00	2.875– 3.00

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

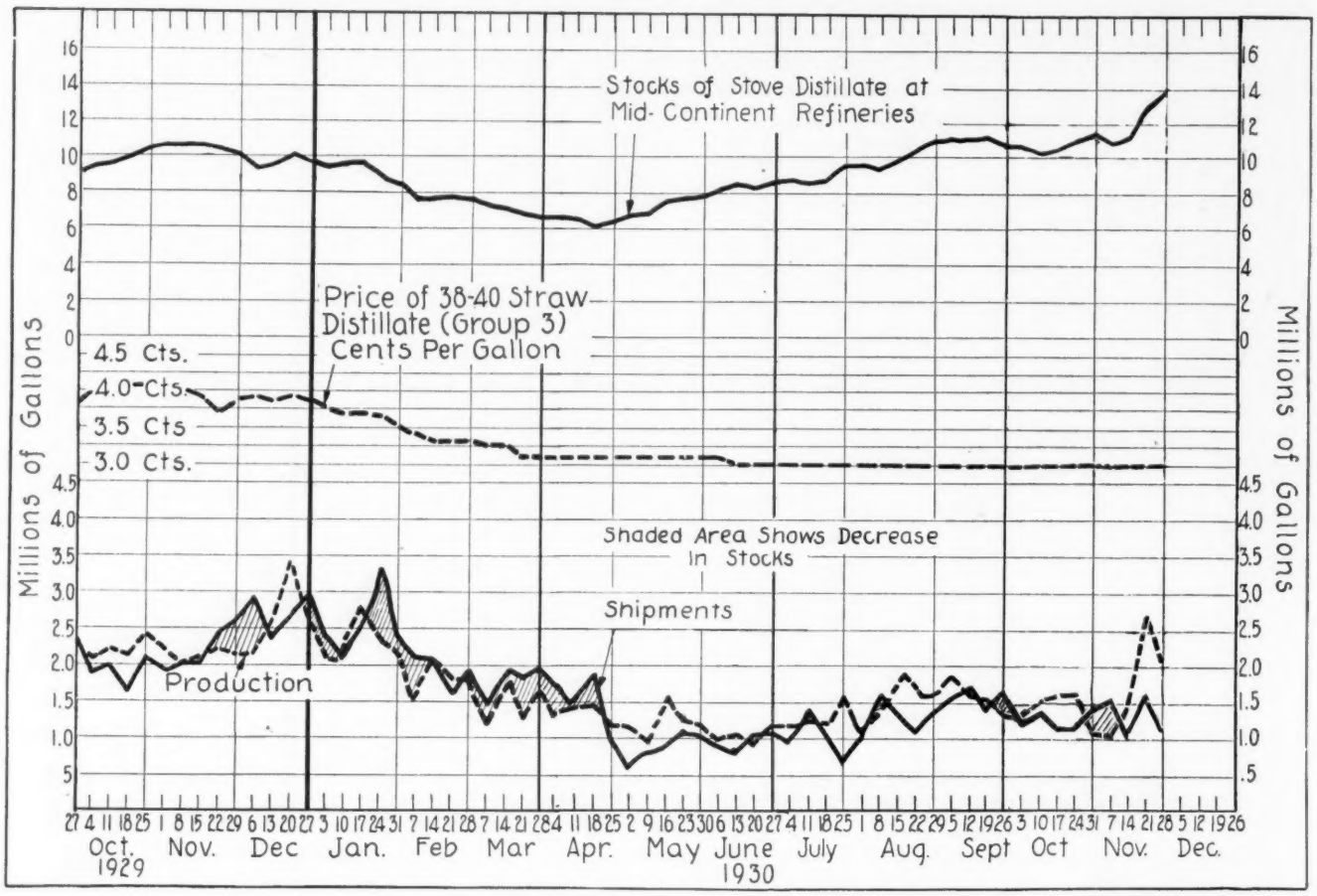
(Per ton in car lots)

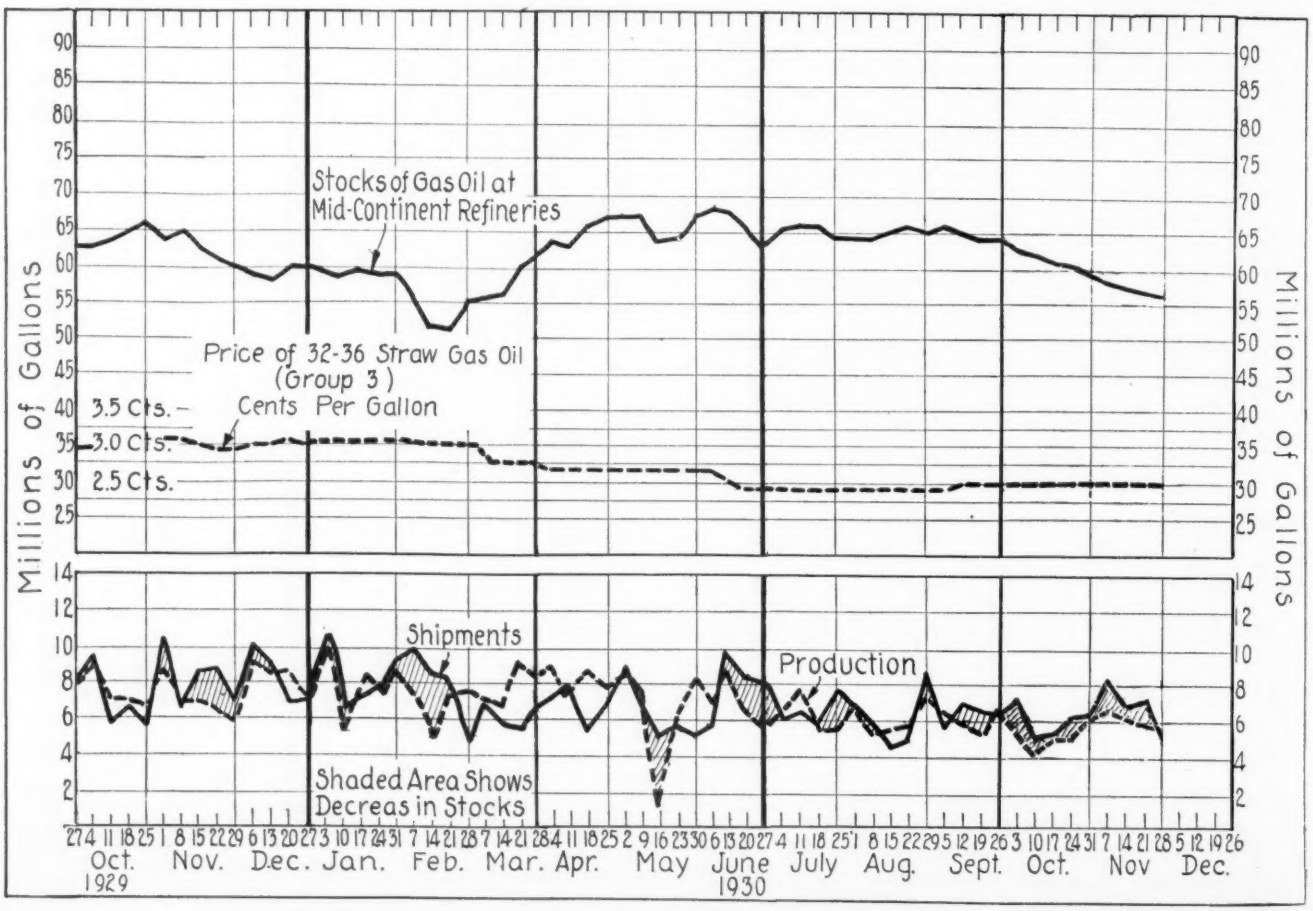
Lump	$4.50 –$5.00	$4.50 –$5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

****Represents Both Sales and Quotations.**

Barometer of Mid-Continent Refinery Market—Week Ending November 28

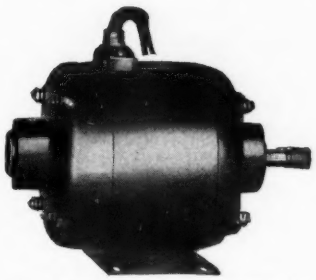
Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.5 Cts.
4.0 Cts.
3.5 Cts
3.0 Cts.
Shaded Area Shows Decrease In Stocks
Shipments
Production
Millions of Gallons
Millions of Gallons
Oct. 1929 Nov. Dec Jan. Feb Mar Apr. May June July Aug. Sept Oct Nov. Dec.
1930

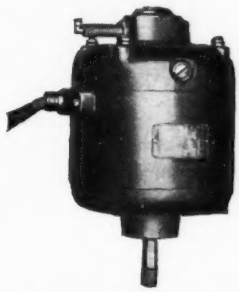

Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Shipments
Production
Shaded Area Shows Decreas in Stocks
Millions of Gallons
Millions of Gallons
Oct. 1929 Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov Dec.
1930

The Manufacturer With an Eye to Your Future Selects

G-E Motors for Gasoline Dispensers



G-E fractional-horsepower motor for horizontal operation



G-E fractional-horsepower motor for vertical operation

These G-E fractional-horsepower motors are approved by the Board of Underwriters and are supplied for either horizontal or vertical mounting in gasoline dispenser cabinets. They are furnished in 3 sizes: ¼ hp., ⅓ hp., and ½ hp., in the various frequencies and voltages.

HE knows that your gasoline dispensing pumps may be in widely separated locations—over several states, perhaps; he knows that your profits are built on uninterrupted service. And he appreciates the importance of motor-service facilities that are always available. That's why he selects G-E motors.

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GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

Barometer of Mid-Continent Refinery Market—Week Ending November 28

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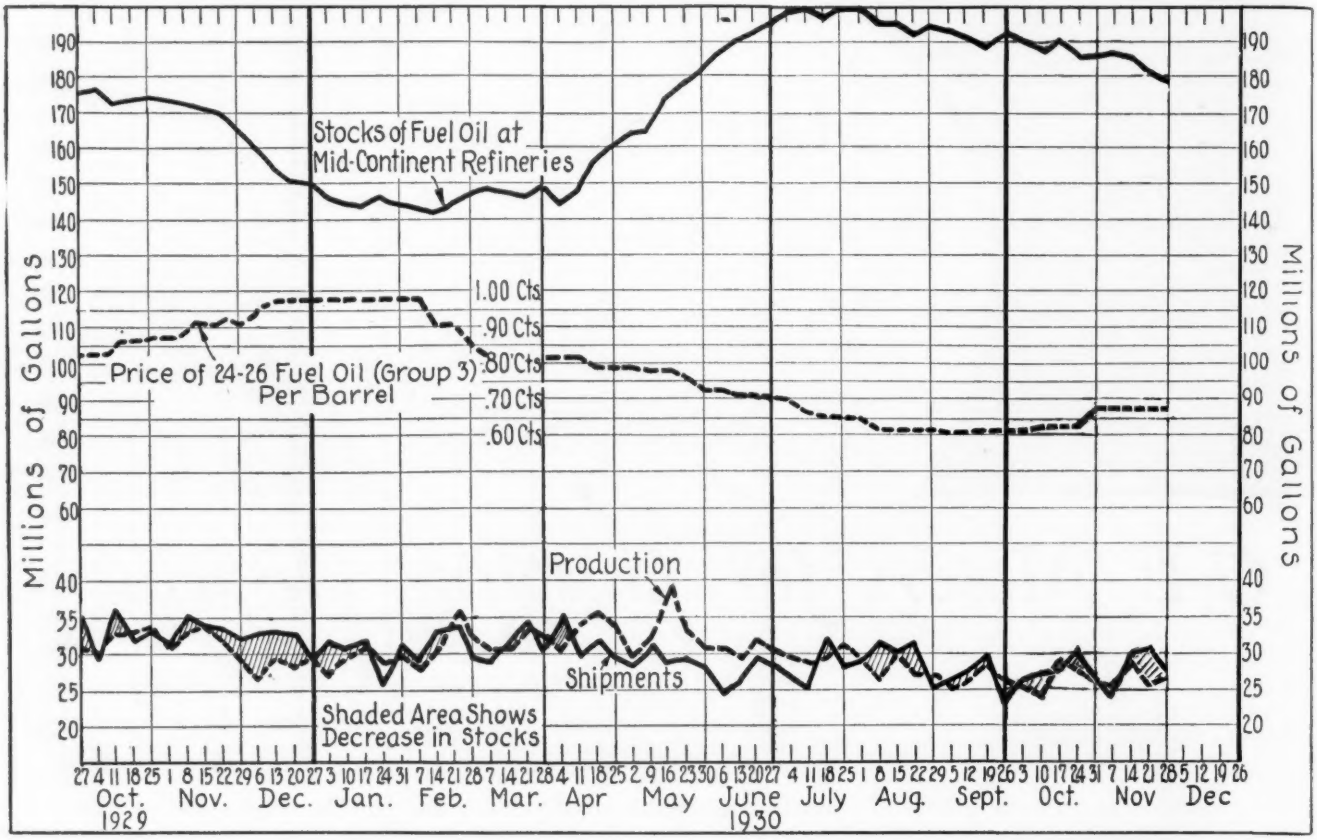

California Refinery Market

Japanese Buyer Seeks Large Quantity of Gasoline

LOS ANGELES, Nov. 29

INCLEMENT weather hampered spot gasoline movement in Pacific Coast territory during the Thanksgiving holidays. Heavy oils were slightly more in demand although quotations on fuel oil continued at low levels.

Reports regarding activity in the export market varied somewhat. Companies capable of handling large shipments reported numerous inquiries while those with limited capacities thought this branch of the market was exceptionally quiet.

An inquiry came into the market early in the week from a Japanese buyer for U. S. Motor gasoline. Although the account was inquiring for several cargoes for immediate delivery it was indicated there was a demand for approximately six million gallons per month over 1931, if a suitable quotation was forthcoming.

Apparently on the basis of reports of several bulk shipments of California gasoline at about 6 cents per gallon, the Japanese buyer was reported offering 5.875 cents. As the week ended, however, quotations on export gasoline were at a minimum of 6.50 cents, that posted by Standard of California, f.o.b. San Pedro.

Aside from this interest in gasoline for export the bulk market was featureless and quotations remained unchanged. For tank car movement one dealer was quoting 8 cents where the gasoline was to be used within the state, but outside the Los Angeles basin. One member of the trade sold several cars at 8.50 to 9.25 cents, without tax, for shipment to the southern part of the state.

Demand for U. S. Motor in out-of-state territory was very light and although quotations were unchanged at 7.50 to 8.50 cents the trade thought this spread would have to be shaded to secure business in competitive territory.

The colder weather created a good demand for kerosine with several spot sales reported at 5.50 cents per gallon. The spread on this commodity was 5 to 6 cents.

Fuel oil from small refiners running the sulfurous Playa del Rey crude was plentiful in the Los Angeles basin. One dealer said he would shade 25 cents per barrel on any quantity.

Natural gasoline was quoted at 6 to 7 cents in tank car lots. Standard of California was reported to have set a figure of 6.50 cents for payment of royalty casinghead gasoline and Union of California was said to be paying 6 cents to the royalty owners.

Several contracts for natural gasoline up for renewal have already been cancelled. It was reported two bulk shipments to the East Coast netted back 4.75 and 5 cents per gallon, respectively.

Pennsylvania Markets

Wax Active; Prices Advance

CLEVELAND, Dec. 2.—A more active demand for wax stood out rather prominently in markets that otherwise were generally quiet in western Pennsylvania last week. Wax prices moved up slightly and prices of most other commodities held their ground fairly well. Cylinder stocks were the only ones to experience any appreciable downward price recessions and these were largely on the top side of the market.

An all around better demand for wax from both foreign and domestic buyers in the New York market was quickly reflected in the Pennsylvania field. Apparently the recent more regular buying of the Spanish Monopoly has urged other foreign buyers to consider current wax prices as extremely attractive.

New York brokers were actively bidding for supplies of white crude scale in Pennsylvania. Prices in this district advanced from 2.15 cents a pound to a minimum of 2.25 cents a pound. Several refiners reported at the end of the week that their production for the balance of the year had been committed. Several of them were asking 2.375 cents a pound for scale for fairly prompt shipment although one refiner offered to ship over January at this price.

Winter weather slowed up the demand for gasoline considerably but prices generally speaking showed little variation from those quoted the previous week. U. S. Motor was more freely offered at 6.50 cents but, according to reports, there was no shading of this figure. Demand last week was better for the high gravity gasolines. The Canadian situation, however, has caused quite a bit of the higher grades to pile up in Pennsylvania and this has tended to keep prices from improving.

Kerosine, according to reports from some sections of the field, improved considerably. More refiners who previously had been quoting 4.75 to 4.875 cents advanced their prices to 5 cents and brokers said they found it difficult to buy under 4.75 cents for resale. On the other hand several sellers reported selling direct to the trade at 4.75 cents.

One manufacturer reported a considerably better demand for bright stock from middle western buyers but aside from this there was little change in activity in this division of the market. Several refiners who had been quoting the top side of the market for cylinder stocks reduced their prices 1 to 2 cents a gallon. There were no changes in the lows of price ranges except for the 600 filterable steam refined which sold 0.25 cent lower at 8.75 cents.

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CLEVELAND—1213 West Third St.

Eastern Domestic Markets

Gasoline Active at Lower Prices

Staff Special
NEW YORK, Nov. 29

GASOLINE markets along the Atlantic seaboard became unsettled again during the week ended Nov. 29 when several sellers at New York harbor began offering U. S. Motor at 6.25 cents. There was considerable resistance to the adoption of this price as representing the general market. A number of sellers reported they would depend upon the merits of their products to attract business at higher prices.

New England and extreme southern seaboard districts were the only ones where prices held their ground. The feeling prevailed generally in these districts that prices were on bottom and a return to higher levels was near at hand.

Sales of U. S. Motor reported by New York harbor sellers around the middle of the week disclosed that a considerable volume of business was moving at 6.25 cents. Several sellers quoting up to 6.75 cents occasionally reported sizable sales, but very little spot business was being done at above this figure.

Prices for California gasoline were lower in all districts where this material is traded. Sales from New York harbor were reported at 7 cents against a minimum of 7.50 cents a week ago. A few scattered sales were reported at slightly less than 7 cents when it was necessary for the seller to absorb part of the freight charges in order to get the business.

The Baltimore and Philadelphia markets for California gasoline were down to 7.25 cents although one seller in the former district indicated he would shade this price on firm offer for large lots. Regular U. S. Motor gasoline was freely available at last week's prices of 6.75 to 7 cents in both markets.

Gasoline markets in New England were unaffected by the lower prices prevailing at New York harbor. Sellers in the Boston district reported business was good for the season at the minimum 7.75-cent delivered price. Portland and Providence prices were unchanged.

Demand for kerosine was somewhat better with the colder weather. One or two sellers reported a fair volume of sales at 6 cents f.o.b. New York harbor.

The sudden drop in temperatures around Thanksgiving stimulated the demand for burning oils. Prices of these oils were kept from advancing by the proximity of kerosine prices, according to sellers' reports.

Grade C bunker oil was unchanged at $1.05 per barrel at New York and Boston. Some shading of this price was reported in the Philadelphia district. Prices there are usually in line with New York.

Gulf Lubes More Active

HOUSTON, Nov. 29.—Demand for Gulf Coastal lubricants has increased with the closer approach of winter weather. Jobbers are taking out larger quantities of the various grades and contract business has been coming in to manufacturers in better volume. Prices, however, remain unchanged as against schedules prevailing in recent weeks.

Gulf Coast Markets

Belgian Buyer Pays 6.50 Cents for 64-66

Staff Special
NEW YORK, Nov. 29

GULF markets took on new life the past week with the closing of the first strictly open market light oil transaction by an American exporter since the abandonment of price fixing by the export association.

Prices for gasoline and kerosine did not show any improvement, in fact lower prices were established for the two most important grades of gasoline in the export market—U. S. Motor and 64-66, 375 end point. But the fact that actual business had been placed, leading them out of the wilderness, so to speak, was stressed by the trade.

Since the association discontinued its price-fixing policy, American exporters have reported they were working more or less in the dark. Foreign buyers in an effort to get still lower prices circulated wild rumors through the trade, and the business closed the past week dissipated a good many of these rumors.

A Belgian buyer early in the week purchased from a leading Philadelphia refiner approximately 65,000 barrels of 64-66, 375 end point gasoline for January loading. The price paid was 6.50 cents a gallon. Rumors emanating from abroad had had this grade of gasoline selling 0.125 to 0.25 cent lower. A part cargo of U. S. Motor gasoline was sold at 5.50 cents a gallon, also for January lifting.

A French buyer also entered an inquiry for a mixed cargo the past week to consist of approximately the following quantities: 45,000 barrels of 64-66, 375 end point gasoline; 12,000 barrels of U. S. Motor; and 4000 barrels each of prime white and water white kerosine. This inquiry was still open at the close of business Nov. 29.

Prices for cased gasoline and kerosine were unchanged. The demand for these commodities improved somewhat the past week.

Heavy oils generally were quiet. Demand for gas oil has slackened a bit but prices showed little variation from those quoted a week ago. Prices for bunker oil were lower. A sale was reported early in the week of one cargo of Grade C at $0.61 a barrel, 4 cents under the last paid price. Several sellers were offering oil at $0.60 a barrel as the week ended.

Venezuela Crude

The market for Venezuela crude has stiffened due to the curtailment of production. Traders conversant with the market for this oil reported they were unable to make open market offers and that it probably would be impossible to make up a cargo before the first of the year.

Nominal prices quoted for Venezuela crude ranged from $0.75 to $0.80 per barrel, f.o.b. deepwater in the Lake Maracaibo region.

Panuco Crude

Mexican heavy oils were generally unchanged. Demand was fair, according to reports, with Panuco quoted at $0.56 per barrel.

Wax Markets

Prices Higher

NEW YORK, Nov. 29.—Better demand has caused prices for all grades of wax to advance 0.125 to 0.25 cent a pound. Improvement was noted in both the New York and New Orleans markets. Foreign buyers the past week showed interest in white crude scale for the first time in several months.

The inquiry from the Spanish Monopoly for approximately 3000 tons of fully refined wax reported last week was still open on Nov. 29. It was reported the closing date had been extended to late next week.

Oil Trademarks For Copyright

THE following are trademark applications pertinent to our field pending in the United States Patent office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C. trademark specialists.

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"DOUBLE-QUICK!" and representation of a man with a gun. Ser. No. 300,045. Beacon Oil Company, by change of name Colonial Beacon Oil Company, Boston, Mass. For refined, semirefined, and unrefined oils and greases made from petroleum both with and without admixture of animal, vegetable, or mineral substances for illuminating, burning, power fuel and lubricating purposes and lubricating greases.

"G AND DESIGN." Ser. No. 302,728. Galena Oil Corporation, Franklin, Pa. For illuminating and lubricating oils and lubricating greases.

"NOURSITE." Ser. No. 305,085. Nourse Oil Company, Kansas City, Mo. For motor lubricating oils and greases.

"LAUREL." Ser. No. 293,883. Laurel Soap Manufacturing Co., Inc., Philadelphia, Pa. For lubricating oils for knitting machines.

"GOLDEN STATE KARAT." Ser. No. 300,151. Glenn A. Smith, Los Angeles, Calif. For petroleum and products of petroleum with or without admixture of other materials, etc.

"HYDROFOL." Ser. No. 302,759. The Wyandotte Oil & Fat Company, Cleveland, Ohio. For hydrogenated fats intended as an ingredient or emulsifying base of lubricants.

"LUB-X-" Ser. No. 304,137. H. O. Green, Napoleon, Ohio. For condensed motor oil to be added to lubricating oil to increase its efficiency.

"BIJUR." Ser. No. 305,994. Bijur Lubricating Corporation, New York City. For lubricating oils.

"MAGIC," etc. Ser. No. 295,483. P. A. Lefebvre & Company, Ltd., Alexandria, Ontario, Canada. For preparation used in gasoline and kerosine engines for removing and eliminating carbon and for increasing power and mileage.

"JANEAR," and representation of a shock of wheat. Ser. No. 299,982. John A. McNear, doing business as J. A. McNear Co., San Francisco, Calif. For illuminating oils, motor-fuel oils, and lubricating oils.

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NAPHTHA—GAS—OILS
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CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices:
PITTSBURGH, PA.

District Sales Offices: New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices Dec. 1	Prices Nov. 24	Prices Nov. 17
U. S. MOTOR GASOLINE			
New York harbor	6.25 – 6.75	6.50 – 7.00	6.75 – 7.25
Portland district	**8.25	**8.25	*8.25 – 8.50
Boston district	**7.75	**7.75	*7.75 – 8.00
Providence district	*7.875– 8.25	*7.875– 8.25	*7.875– 8.25
Philadelphia district	6.75 – 7.00	6.75 – 7.00	6.75 – 7.25
Baltimore district	6.75 – 7.00	6.75 – 7.00	7.00 – 7.50
Norfolk district	7.00 – 7.25	7.00 – 7.25	7.50
Charleston district	7.00	7.00	7.50
Savannah district	7.00	7.00	7.00 – 7.50
Jacksonville district	7.00	7.00	7.00 – 7.50
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	7.00 – 7.25	†7.50	†8.00
Philadelphia district	7.25 – 7.50	7.50	7.625– 7.75
Baltimore district	7.25 – 7.50	7.50	7.50
‡DOMESTIC AVIATION GASOLINE			
New York harbor	10.00 –13.00	10.00 –12.00	10.00 –12.00
Philadelphia	10.00 –12.00	10.00 –12.00	10.00 –12.00
Baltimore	11.00 –13.00	11.00 –13.00	11.00 –13.00
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.25 – 6.75
Philadelphia district	6.00 – 6.25	6.00 – 6.25	6.25
Baltimore district	6.50	6.50	6.50 – 6.75
GAS OIL: 28-34 Gravity			
New York harbor	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
Boston district	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
FURNACE OIL: 36-40 Gravity			
New York harbor	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
Boston district	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.00 –$1.05
DIESEL OIL			
New York harbor	$2.00	$2.00	$2.00 –$2.10

†Nominal. *Delivered prices. **Minimum delivered price.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	Dec. 1	Nov. 24	Nov. 17
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	27.50 –29.50	27.50 –29.50	27.50 –29.50
Bright stock, No. 6½ color diluted	26.00 –28.00	26.00 –28.00	26.00 –28.00
600 D filtered	24.00 –28.00	24.00 –28.00	24.00 –28.00
600 Warren E. filtered	22.00 –25.00	22.00 –25.00	22.00 –25.00
600 atm. refd. unfiltered	16.50 –17.50	17.00 –18.00	17.00 –18.00
650 atm. refd. unfiltered	20.00 –22.00	20.00 –22.00	20.00 –22.00
600 flash, steam refined	22.00 –24.00	23.00 –25.00	23.00 –25.00
630 flash, steam refined	31.00 –33.00	31.00 –33.00	31.00 –33.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	17.00 –19.00	17.00 –19.00	17.00 –19.00
250 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
200 vis. No. 6 color	16.25 –17.00	16.25 –17.00	16.25 –17.00
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¼ color	21.50	21.50	21.50
180 vis. No. 3¼ color	17.00 –18.00	17.00 –18.00	17.00 –18.00
100 vis. No. 2¼ color	12.50 –15.00	12.50 –15.00	12.50 –15.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	27.50 –30.00	27.50 –30.00	27.50 –30.00
400 vis. No. 7¼ color	26.00 –29.00	26.00 –29.00	26.00 –29.00
300 vis. No. 6 color	22.00 –26.00	22.00 –26.00	22.00 –26.00
200 vis. No. 6 color	21.00 –23.50	21.00 –23.50	21.00 –23.50

Wax Market

(Prices in cents per pound, A.S.T.M. tests except melting point test for which only the American method is used. F.a.s. carload lots)

	Dec. 1	Nov. 24	Nov. 17
NEW YORK			
124-126 Yellow crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
122-124 White crude scale	2.30 – 2.40	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.30 – 2.40	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.25	3.125– 3.25	3.125– 3.25
125-127 Fully refined	3.375	3.25 – 3.375	3.125– 3.25
128-130 Fully refined	3.625	3.50 – 3.625	3.50 – 3.625
130-132 Fully refined	3.875	3.625– 3.875	3.625– 3.875
133-135 Fully refined	4.375	4.25 – 4.375	4.25 – 4.375
135-137 Fully refined	4.625	4.50 – 4.625	4.50 – 4.625
NEW ORLEANS			
124-126 Yellow crude scale	2.25 – 2.375	2.25	2.125– 2.25
122-124 White crude scale	2.375	2.25 – 2.375	2.25 – 2.375
124-126 White crude scale	2.375	2.25 – 2.375	2.25 – 2.375
123-125 Fully refined	3.25	3.125– 3.25	3.00 – 3.125
125-127 Fully refined	3.25	3.125– 3.25	3.00 – 3.25
128-130 Fully refined	3.375– 3.50	3.25 – 3.375	3.25 – 3.375
130-132 Fully refined	3.75	3.625– 3.75	3.625– 3.75
133-135 Fully refined	4.375	4.25 – 4.375	4.25 – 4.375

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment unless otherwise noted.)

	Prices Dec. 1	Prices Nov. 24	Prices Nov. 17
GASOLINE			
U. S. Motor	5.50 – 5.75	5.75 – 6.00	5.75 – 6.00
60-62, 400 e.p.	6.00	6.25	6.25
61-63, 390 e.p.	6.25	6.50	6.50
64-66, 375 e.p.	6.50 – 6.75	6.625– 6.875	6.625– 6.875
U. S. Motor, cases (cargoes)	$1.60	$1.60	$1.60
64-66, cases (cargoes)	$1.70 –$1.72	$1.70 –$1.72	$1.70
KEROSINE			
44 water white	5.25 –5.50	5.50	5.50
41-43 prime white	4.50	4.50	4.50
Water white, cases (cargoes)	$1.40	$1.40	$1.40
Prime white, cases (cargoes)	$1.30	$1.30	$1.30
GAS & BUNKER OILS			
*26-30 translucent gas oil	3.125– 3.25	3.125– 3.25	3.50
*30 plus translucent gas oil	3.375– 3.50	3.375– 3.50	3.50
Grade C bunker oil, for ships' bunkers, per bbl.	$0.90	$0.90	$0.90
Grade C bunker oil, per bbl. in cargoes	$0.60 –$0.65	$0.65 –$0.75	$0.65 –$0.75

*Less than ½ of 1% sulphur.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl.	$0.56	$0.55 –$0.60	$0.55 –$0.60
Grade C bunker oil for bunkering, taxes paid, per bbl.	$1.00	$1.00	$1.00

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
200 vis. No. 3 unfiltered pale	7.625– 8.25	7.625– 8.25	7.625– 8.25
300 vis. No. 3 unfiltered pale	8.75 – 9.50	8.75 – 9.50	8.75 – 9.50
500 vis. No. 3½ unfiltered pale	9.50 –10.50	9.50 –10.50	9.50 –10.50
750 vis. No. 4 unfiltered pale	12.00 –12.75	12.00 –12.75	12.00 –12.75
1200 vis. No. 4 unfiltered pale	14.00 –16.00	14.00 –16.00	14.00 –16.00
200 vis. No. 5-6 red oil	6.75 – 7.50	6.75 – 7.50	6.75 – 7.50
300 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	9.00 – 9.375	9.00 – 9.375	9.00 – 9.375
750 vis. No. 5-6 red oil	10.50 –11.50	10.50 –11.50	10.50 –11.50
1200 vis. No. 5-6 red oil	13.50 –15.00	13.50 –15.00	13.50 –15.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Dec. 1	Nov. 24	Nov. 17
Gasoline, U. S. Motor, 53-55 Gravity	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
Gasoline, U. S. Motor-blends and special cuts	7.00 – 8.25	7.00 – 8.25	7.00 – 8.25
Gasoline, 400 e.p. blend.	8.25 – 9.25	8.25 – 9.25	8.25 – 9.25
Gas Oil, 30-34 per bbl.	$0.87 –$1.05	$0.87 –$1.05	$0.87 –$1.05
Diesel Oil, 27 plus, per bbl.	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05
Bunker oil, 14-18 per bbl.	$0.64 –$0.85	$0.64 –$0.85	$0.64 –$0.85
Fuel oil, 14-18 per bbl.	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosine, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Gasoline, 400 e.p. blend	$1.85 –$2.00	$1.85 –$2.00	$1.85 –$2.00
Kerosine, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

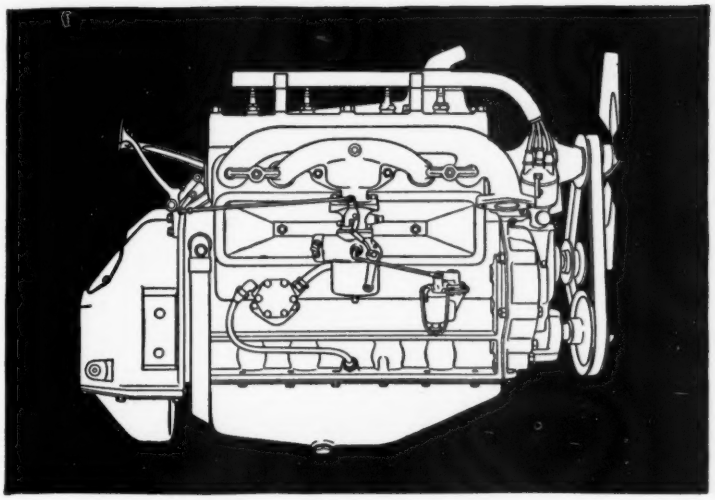
Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Dec. 1 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	21	18
Gulf to U. K. or Continental ports*	11	†10
North Atlantic to U. K. or Continental ports*	9/6	†8/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.50	$0.45–$0.50
Gulf to North Atlantic ports (not E. of N. Y.)**	14–16	14–18

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Two ports discharged.

Compare . . this 48-horsepower engine—



1½ ton DODGE TRUCK

SEE THIS NEW TRUCK. INSPECT THE 48-HORSEPOWER TRUCK ENGINE. NOTE ITS MODERN DESIGN, ITS STURDINESS. ASK WHY FULL FORCE-FEED LUBRICATION INSURES LONGER LIFE, GREATER ECONOMY AND DEPENDABILITY. ASK WHY ALUMINUM ALLOY PISTONS, EXTRA LARGE WATER AREA, RIGID CRANKSHAFT, PRECISION BEARINGS, AND CRANKCASE VENTILATION CONTRIBUTE TO SMOOTH, QUIET, LOW-COST OPERATION.

INSPECT, TOO, THE FULL-FLOATING REAR AXLE, RUGGED 4-SPEED TRANSMISSION, 4-WHEEL INTERNAL HYDRAULIC BRAKES AND MANY OTHER NOTEWORTHY FEATURES OF THIS NEW 1½-TON TRUCK. BUY IT COMPLETE WITH STANDARD OR SPECIAL BODY.

$595

CHASSIS F.O.B. DETROIT. DUAL REAR WHEELS AT SLIGHT EXTRA COST

DODGE TRUCKS RANGE IN PAYLOAD CAPACITIES FROM 1,200 TO 11,175 POUNDS

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect Dec. 1, 1930, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline Total				Oil
	T.W	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	11.5	2	13.5	15.5	11.5
Newark, N. J.	10.5	2	12.5	14.5	10.5
Annapolis	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	9.5
Cumberland, Md.	13	4	17	18	12
Washington, D. C.	11.7	2	13.7	14.7	10.7
Danville, Va.	12.8	5	17.8	18.8	11.8
Norfolk, Va.	11.3	5	16.3	17.3	10
Richmond, Va.	11.7	5	16.7	17.7	10.7
Roanoke, Va.	13	5	18	18	12
Petersburg, Va.	12.3	5	17.3	18.3	11.3
Charleston, W. Va.	12.5	4	16.5	17.5	11.5
Keyser, W. Va.	13.1	4	17.1	18.1	12.1
Parkersburg, W. Va.	11.2	4	15.2	16.2	10.2
Wheeling, W. Va.	12.4	4	16.4	17.4	11.4
Raleigh, N. C.	13.2	5	18.2	19.2	12.2
Charlotte, N. C.	13.3	5	18.3	19.3	12.3
Hickory, N. C.	13.6	5	18.6	19.6	12.6
Mt. Airy, N. C.	13.5	5	18.5	19.5	12.5
Salisbury, N. C.	13.5	5	18.5	19.5	12.5
Charleston, S. C.	11.3	6	17.3	18.3	10.3
Columbia, S. C.	13.2	6	19.2	20.2	12.2

Note: 2c per gallon discount off retail t.w. price of gasoline to dealers only thru S. O. New Jersey territory, except Washington, D. C. where discount is 3c.

CONTINENTAL OIL

Denver, Colo.	12	4	16	19	13.5
Pueblo, Colo.	13	4	17	20	13.5
Grand Junc., Colo.	14	4	18	21	17
Casper, Wyo.	13	4	17	20	12
Cheyenne, Wyo.	14	4	18	21	13.5
Butte, Mont.	14	5	19	22	18
Helena, Mont.	17.5	5	22.5	25.5	18
Salt Lake City, Utah	16.5	3½	20	23	17
Boise, Ida.	18.5	5	23.5	....	19
Twin Falls, Ida.	18.5	5	23.5	....	19
Albuquerque, N. M.	11	5	16	18	15

S. O. CALIFORNIA

	Tax	Retail Price	Posted Wholesale	
Phoenix, Ariz.	4	22.5	19.5	20
Los Angeles, Cal.	3	20.5	22.5	15.5
Fresno, Cal.	3	21	23	17
San Francisco, Cal.	3	21	23	15.5
Reno, Nev.	4	26	28	19
Portland, Ore.	4	20.5	24.5	16.5
Seattle, Wash.	3	20	23.5	16.5
Spokane, Wash.	3	22	27.5	20.5
Tacoma, Wash.	3	18.5	23.5	16.5

Note: 6c per gal. discount to dealers off posted wholesale price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only. This discount determines net t.w. price.

S. O. LOUISIANA

	Posted Retail T.W.	Tax	Total Posted Retail T.W.	Posted Retail S.S.	Oil T.W.
Little Rock, Ark.	10	5	15	16	12
Alexandria, La.	10.5	*5	15.5	16.5	†13
Baton Rouge, La.	10.5	4	14.5	15.5	†13
New Orleans, La.	8.5	*5	13.5	14.5	†12
Lake Charles, La.	10.5	*5	15.5	16.5	†13
Shreveport, La.	10.5	4	14.5	15.5	†13
Lafayette, La.	10.5	*5	15.5	16.5	†13
Bristol, Tenn.	14	5	19	20	14
Chattanooga, Tenn.	12.5	5	17.5	18.5	13
Knoxville, Tenn.	13	5	18	19	15
Nashville, Tenn.	12	5	17	18	15
Memphis, Tenn.	11	5	16	17	12.5

Note: Discounts in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail t.w. price; to consumers at service stations when cash is paid for purchases at time of delivery, 1c per gal. off posted retail s.s. price.

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 4c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.

†Kerosine price in Louisiana includes 1c state tax.

S. O. KENTUCKY

Ashland, Ky.	13	5	18	20	15
Catlettsburg, Ky.	13	5	18	20	15
Lexington, Ky.	12	5	17	18	14.5
Louisville, Ky.	11	5	16	18	12

Latest Changes in Tank Wagon Prices

Gasoline

S. O. Ohio—T.w. and s.s. cut 1c, Lucas County, both to 15c, **Nov. 26.**

T.w. cut 3c, s.s. 4c Ross Township in Wood County, both to 15c, **Nov. 26.**

S. O. Indiana—Aviation gasoline cut 1c thru territory, **Sept. 29**, except Indianapolis cut 0.9c.

S. O. Kentucky—S.s. only cut 1c, Clarksdale, to 18c, same as t.w., **Nov. 21.**

Magnolia Petroleum—T.w. and s.s. up 1c, Ft. Smith, to 15.5c and 16.5c, **Nov. 10.**

T.w. and s.s. up 1c, Little Rock, to 14c and 15c, **Nov. 8.**

Kerosine

S. O. Kentucky—Kerosine cut 1c, Mobile, to 10.5c t.w., **Nov. 21.**

Kerosine cut 1.5c, Clarksdale, to 11c t.w., **Nov. 19.**

Magnolia Petroleum—Kerosine cut 1c, El Paso, to 12c, t.w., **Nov. 24.**

S. O. NEBRASKA

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Omaha, Neb.	13.25	4	17.25	18.25	11.25
McCook	14.75	4	18.75	20.75	12.75
Norfolk	13.25	4	17.25	17.25	11.75
North Platte	14.75	4	18.75	20.75	12.50
Scottsbluff	14.75	4	18.75	20.75	12.25

Note: Discounts: 1c per gal. off tank wagon price of gasoline for 1,000 gallon dumps per month to consumers taking tank wagon delivery only.

S. O. INDIANA

Chicago, Ill.	13	3	16	17	11
Decatur, Ill.	13.4	3	16.4	16	11
E. St. Louis, Ill.	12.7	3	15.7	14.7	10.2
Joliet, Ill.	13.4	3	16.4	17.4	11
Peoria, Ill.	12	3	15	14	11
Quincy, Ill.	13.2	3	16.2	17.2	10.8
Indianapolis, Ind.	12.9	4	16.9	17.9	12.1
Evansville, Ind.	13.1	4	17.1	18.1	11.9
South Bend, Ind.	13.4	4	17.4	18.4	12.2
Detroit, Mich.	13.8	3	16.8	12.5	12.7
Grand Rapids, Mich.	12.7	3	15.7	16.7	12.6
Saginaw, Mich.	13.9	3	16.9	14.3	12.8
Green Bay, Wisc.	13.6	2	15.6	16.6	11.4
Madison, Wisc.	13.3	2	15.3	15.3	11.1
Milwaukee, Wisc.	13.1	2	15.1	15	10.9
La Crosse, Wisc.	14.2	2	16.2	17.2	12
Minneapolis, Minn.	14	3	17	17	11.9
Duluth, Minn.	14.5	3	17.5	17.5	11.9
Mankato, Minn.	11	3	14	14	11.7
Des Moines, Ia.	12.5	3	15.5	15.5	11.3
Davenport, Ia.	13.5	3	16.5	16.5	11.3
Sioux City, Ia.	13.1	3	16.1	15.9	10.9
Mason City, Ia.	13.5	3	16.5	17.5	11.3
St. Louis, Mo.	*10.9	2	12.9	13.9	10.3
Kansas City, Mo.	†12.9	2	14.9	14.9	9.6
St. Joseph, Mo.	†13.5	2	15.5	11.9	10.1
Fargo, N. D.	15.9	3	18.9	19.9	13.9
Grand Forks, N. D.	16.2	3	19.2	20.2	14.2
Minot, N. D.	15.9	3	18.9	19.9	13.9
Pierre, S. D.	14	4	18	19	12.4
Huron, S. D.	13.5	4	17.5	17.5	12.7
Wichita, Kans.	11.8	3	14.8	13.8	9.8
Bartlesville, Okla.	11.5	4	15.5	18.5	9.5

S. O. Indiana's quantity contract price schedule thru territory (except in Chicago, which see below) on tank truck deliveries of gasoline, figured from the service station price is 3c for 500 gal. or more a month; and 4½c for 75,000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 4c per gal. off service station price; over 1,000 gals. per month, 5c per gal. off service station price.

*Includes city tax of ½c.

†Includes city tax of 1c.

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Covington, Ky.	13	5	18	20	14.5
Clarksdale, Miss.	13	5	18	18	11
Gulfport, Miss.††	13	5	18	18	13
Jackson, Miss.	10	5	15	17	13
Natchez, Miss.	13	5	18	20	13
Vicksburg, Miss.	13	5	18	20	13
Birmingham, Ala.‡‡	14	4	18	20	14.5
Mobile, Ala.‡	13	4	17	19	10.5
Montgomery, Ala.*	14	4	18	20	15
Atlanta, Ga.	14	6	20	22	†13.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	14	6	20	22	†13
Savannah, Ga.	12	6	18	20	†14
Jacksonville, Fla.	11	6	17	19	14
Miami, Fla.	13	6	19	21	14
Tampa, Fla.	12	6	18	20	13
Pensacola, Fla.**	14	6	20	21	13.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.

†Georgia kerosine prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

S. O. OHIO

Ohio statewide	14	4	18	19	15
Preble County	14	4	18	18	15
Lucas County	11	4	15	15	15
Butler County	11	4	15	15	15

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices. In counties where prices are below statewide schedule, discount is 3c per gal. off t.w. price.

Discount on kerosine to dealers and commercia consumers is 3c per gal. off t.w. price thru Ohio.

MAGNOLIA PETROLEUM

Muskogee, Okla.	11	4	15	18	9
Oklahoma City.	9	4	13	16	10
Tulsa, Okla.	10	4	14	18	10
Fort Smith, Ark.†	11.5	4	15.5	16.5	12
Little Rock, Ark.	9	5	14	15	12
Texarkana, Ark.*	13	4	17	17	12
Dallas, Tex.	10	4	14	17	11
Fort Worth, Tex.	10	4	14	17	10
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	9	4	13	17	11
El Paso, Tex.	12	4	16	20	12

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 3/50c on both.

Kerosine inspection fees only, per gallon: Iowa 7/100c; Michigan 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect Dec. 1, 1930, as Posted by Principal Marketing Companies

S. O. NEW YORK

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	12.3	2	14.3	16.3	10
Borough of Richmond	13.7	2	15.7	17.7	11.7
Albany, N. Y.	13.6	2	15.6	17.6	12.6
Buffalo, N. Y.	12.8	2	14.8	16.8	9
Rochester, N. Y.	13	2	15	17	9
Syracuse, N. Y.	15.8	2	17.8	19.8	12.8
Boston, Mass.	12.5	2	14.5	16.5	10
Augusta, Me.	15.8	4	19.8	21.8	12.8
Manchester, N. H.	15.4	4	19.4	21.4	10
Burlington, Vt.	16.3	4	20.3	22.3	13.3
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Providence, R. I.	10.7	2	12.7	14.7	10

Note: S. O. New York allows 3c off t.w. price to dealers in New York City, and 2c off t.w. price thru rest of territory.

ATLANTIC REFINING

Pittsburgh, Pa.	14	*	14	19	12
Philadelphia, Pa.	14	*	14	19	12
Allentown, Pa.	14	*	14	19	12
Erie, Pa.	14	*	14	18	12
Scranton, Pa.	14	*	14	19	12
Altoona, Pa.	14	*	14	19	12
Dover, Del.	14	3	17	19	12
Wilmington, Del.	14	3	17	19	12
Boston, Mass.	12.5	2	14.5	16.5	10
Springfield, Mass.	15.5	2	17.5	19.5	10
Worcester, Mass.	15.3	2	17.3	19.3	10
Fall River, Mass.	12.1	2	14.1	15.1	10
Providence, R. I.	10.7	2	12.7	14.7	10
Hartford, Conn.	15.5	2	17.5	19.5	10
New Haven, Conn.	15.6	2	17.6	19.6	10
Atlantic City, N. J.	12.5	2	14.5	15.5	11.5
Camden, N. J.	11.6	2	13.6	14.6	10.6
Trenton, N. J.	12	2	14	15	11
Annapolis, Md.	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	10.2
Hagerstown, Md.	12.7	4	16.7	17.7	11.7
Richmond, Va.	11.7	5	16.7	17.7	10.7
Wilmington, N. C.	11.4	5	16.4	17.4	12.4
Brunswick, Ga.	14	6	20	22	**15
Jacksonville, Fla.	13	6	19	19	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics. Erie has dealer discount of 4c off t.w. price, effective May 28.

*3-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosine prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	12.7	14.7	16.2
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**20.7	**22.2	**24
St. Louis	13.9	17.1	18.9
New York		10	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)

New York harbor	10.00
Philadelphia district	10.00
Providence	10.50

Tank Wagon or Steel Barrels

New York City	15–16
Syracuse	17–18
Rochester	18
Buffalo	16–18
Providence	17–18
Boston	18–19
Bridgeport	16–18
Newark	14–16
Philadelphia	16–17
Baltimore	17

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	18.5	5	23.5	27	19.5
Ottawa	18.5	5	23.5	27	19.5
North Bay	21.5	5	26.5	32	26
Ft. William	21.5	5	26.5	30	21.5
Border Cities, including Windsor	17.5	5	22.5	26	18.5
MANITOBA					
Winnipeg	20	5	25	29	20.5
SASKATCHEWAN					
Regina	25	5	30	34	25
ALBERTA					
Edmonton	26.5	5	31.5	35	26.5
Calgary	22.5	5	27.5	31	22.5
BRITISH COLUMBIA					
Vancouver	23	5	28	32	24
QUEBEC					
Montreal	19.5	5	24.5	28	20.5
Quebec City	20.5	5	25.5	29	21.5
Three Rivers	20.5	5	25.5	29	21.5
NEW BRUNSWICK					
St. John	19	5	24	28	21
Moncton	19	5	24	28	21
NOVA SCOTIA					
Halifax	19	5	24	28	21
PRINCE EDWARD ISLAND					
Charlottetown	19	5	24	28	21

Note: In districts surrounding these points 1c additional is added to city price.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect Dec. 1, 1930

	T.W.	Tax	T.W.
Newark, N. J.	17.4	*	17.4
Baltimore, Md.	16.2	4	20.2
Washington, D. C.†	18.0	2	20.0

*New Jersey road tax of 2c does not apply on aviation gasoline, exemption being claimed at time of purchase.

†Price at Washington is on Stanavo Aviation gasoline which sells at a ½c premium over "Standard" aviation gasoline.

COLONIAL BEACON OIL CO.

New York City	17.5	2	19.5
Boston	21	2	23

S. O. PENNSYLVANIA

Philadelphia, Pa.	18	3	21
Pittsburgh, Pa.	18	3	21
Altoona, Pa.	18	3	21

S. O. OHIO

Thru Ohio	16	4	20

Discounts given by S. O. Ohio: For airport delivery only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c; 24,000 gals. and over per month, 4c.

S. O. INDIANA

Chicago	16	3	19
Indianapolis, Ind.	16.3	4	20.3
Detroit, Mich.	16.8	3	19.8
Milwaukee, Wis.	16.1	2	18.1
Minneapolis, Minn.	17.2	3	20.2
St. Louis, Mo.	15.4	2½	17.9
Kansas City, Mo.	15.9	3	18.9
Fargo, N. D.	18.9	3	21.9
Huron, S. D.	17.3	4	21.3
Wichita, Kan.	14.8	3	17.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. St. Louis tax of 2½c includes ½c city tax and Kansas City tax includes 1c city tax.

S. O. LOUISIANA

New Orleans, La.	18	5	23
Nashville, Tenn.	20	5	25
Memphis, Tenn.	19	5	24

2c per gal. discount off above t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	16.25	4	20.25

2c per gal. refund to resellers.

CONTINENTAL OIL CO.

*Denver, Col.	15	4	19
Cheyenne, Wyo.	17	4	21
Helena, Mont.	23.5	5	28.5
Salt Lake City, Utah	19.5	3.5	23
†Albuquerque, N. M.	15	5	20
Boise, Ida.	21.5	5	26.5

*1c per gal. discount to dealers at Denver. †2c per gal. commercial discount is given off s.s. price a Albuquerque; disoount off t.w. price eliminated Sept. t

S. O. CALIFORNIA

Phoenix, Ariz.	17.5	4	21.5
Los Angeles, Cal.	16.5	3	19.5
San Francisco, Cal.	17	3	20
Reno, Nev.	21	4	25
Portland, Ore.	17.5	4	21.5
Seattle, Wash.	17.5	3	20.5
Spokane, Wash.	21.5	3	24.5

Note: 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.

Treating

Reduction of sulfur in gasoline to prescribed limits is still a chief problem in light oil treating.

The increasing use of vapor phase cracking has brought the problem of gum removal into the refiner's foreground. These developments and progress in methods of decolorizing lube oils, and removal of wax, are being discussed in their various phases in National Petroleum News.

Here are 31 articles for your file reference that have been published on treating since the first of 1929:

1930

Effect of time, temperature in treating cracked distillates Nov. 12, p. 121
Circulation cuts litharge treating costs Nov. 12, p. 101
Cottrell process gets acid mist from concentrators Oct. 15, p. 67
Eight-stream unit solves distillation problems Sept. 24, p. 135
Sulfur limitation in gasoline June 18, p. 69; June 11, p. 41.
Acid recovery plants—description of processes May 21, p. 72
Acid recovery plants—light and heavy sludges May 14, p. 66
Continuous treating and dispersion contactors March 12, p. 32-F
Treating light distillates; action of sulfuric acid and caustic soda March 5, p. 57

1929

Modern refining—science and practice Dec. 18, p. 69; Dec. 4, p. 85; Nov. 20, p. 69
Solving corrosion, gum, anti-knock, volatility problems Dec. 11, p. 34
Neutralization best method of combating corrosion Dec. 11, p. 36
Power costs, solvents, in low pour point oils Dec. 11, p. 79
Free sulfur greatest corrosive agent in cracking plants Dec. 11, p. 89
Gum in gasoline not indicated by color Dec. 11, p. 93
Inhibitors stabilize gasoline color and knock rating Dec. 4, p. 40
Methods to combat corrosion in pressure stills Dec. 4, p. 49
Degasification, etc., of pressure distillate Oct. 30, p. 60
Skimming, cracking, lube making from Ranger paraffin crude June 26, p. 80; June 19, p. 78; June 5, p. 73
De-salting, distillation, light cracking West Texas crude May 29, p. 65
Time a factor in sweetening sour gasoline May 22, p. 78
Treating sulfur out of West Texas gasoline May 15, p. 75
Sulfur compounds and corrosion problems Feb. 27, p. 72
How wash naphtha? With soap and water Feb. 20, p. 61
Hydrogen sulfide gas hazards in West Texas Feb. 20, p. 45
Muskegon gasoline high in sulfur Feb. 6, p. 65

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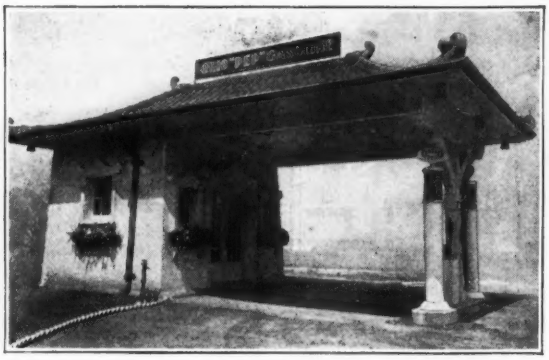
Cleveland, Ohio



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Cleveland, Ohio

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Also comes in another model complete without skids for permanent location.

Write for details and prices.

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SISTERSVILLE TANK & BOILER WORKS, SISTERSVILLE, W. VA.

Crude Oil Prices (in Effect Dec. 1, 1930)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Alleghany district (posted by Tide Water Pipe Co., Ltd.) (Effective Nov.12,1930) $2.15
Penna. Grade Oil in National Transit Lines (Effective Nov. 12, 1930) *1.85
Penna. Grade Oil in Southwest Penna. Pipe Lines (Effective Nov. 12, 1930) 1.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Nov. 12, 1930) 1.70
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Nov. 12, 1930) 1.45
Wayne district crude in Cumberland lines (West Virginia) (Effective Oct. 29, 1930) 0.97
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Oct. 28, 1930) 1.25
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Oct. 29, 1930) 1.10
Somerset Oil in Eureka Pipe Lines (Effective Oct. 29, 1930) 0.94
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929) $0.60
*Oil run prior to July 1, 1929 is 5c less per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Nov. 10, 1930) $1.00

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective Oct. 28, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (Oct. 28, 1930) $1.10

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Oct. 28, 1930

Wooster	$1.35	Princeton	$1.30
Lima	1.10	Illinois	1.30
Waterloo	1.20	Plymouth	0.88
Indiana	0.87	West Kentucky	1.15

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Oct. 28, 1930

Petrolia $1.50
Oil Springs 1.57

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Nov. 1, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

Oct. 25, Stanolind Crude Oil Purchasing Co. same schedule in Oklahoma-Kansas as Prairie. On Oct. 27, The Texas Co. met Prairie prices in Oklahoma, and on Oct. 28, in North Texas and North Central Texas.

Humble Oil & Refining Co. Prices

Effective Oct. 28, 1930

In Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona fields, all in Texas, same prices as Prairie, which see above.

Magnolia Petroleum Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Oct. 28, 1930

Magnolia posts same prices in all three states as Prairie, except these lower grades:

Below 26	$0.53	27-27.9	$0.61
26-26.9	0.57	28-28.9	0.65

Effective Oct. 28, 1930

Corsicana heavy	$0.75
Luling	0.75
Mirando	0.75
Darst Creek, 60° and above	0.90

Carter Oil Co.

(Oklahoma and Kansas)

Oct. 27, 1930, same schedule as Prairie, which see above.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Oct. 28, 1930

Hutchinson and Carson Counties

Below 29	$0.45	35-35.9	$0.72
29-29.9	0.49	36-36.9	0.75
30-30.9	0.53	37-37.9	0.78
31-31.9	0.57	38-38.9	0.81
32-32.9	0.61	39-39.9	0.84
33-33.9	0.65	40 and above	0.87
34-34.9	0.69		

Gray County:

Below 29	$0.50	35-35.9	$0.77
29-29.9	0.54	36-36.9	0.80
30-30.9	0.58	37-37.9	0.83
31-31.9	0.62	38-38.9	0.86
32-32.9	0.66	39-39.9	0.89
33-33.9	0.70	40 and above	0.92
34-34.9	0.74		

Above prices met by Magnolia and The Texas Co. on Oct. 28 in Hutchinson, Carson and Gray counties.

Wheeler County: Posted by Magnolia Pet. Co. Effective Apr. 10. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective Oct. 28, 1930

Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, Tex., also Lea County, N. Mex.

Below 25	$0.50	31-31.9	$0.64
25-25.9	0.52	32-32.9	0.66
26-26.9	0.54	33-33.9	0.68
27-27.9	0.56	34-34.9	0.70
28-28.9	0.58	35-35.9	0.72
29-29.9	0.60	36 and above	0.74
30-30.9	0.62		

Winkler and Pecos counties, Tex.:

Effective Oct. 28, 1930

Below 25	$0.55	31-31.9	$0.69
25-25.9	0.57	32-32.9	0.71
26-26.9	0.59	33-33.9	0.73
27-27.9	0.61	34-34.9	0.75
28-28.9	0.63	35-35.9	0.77
29-29.9	0.65	36 and above	0.79
30-30.9	0.67		

Oct. 28, 1930, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble.

Oct. 28, Magnolia same prices in Winkler, Crane, Upton, Howard, Glasscock and Mitchell counties.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Oct. 28, 1930

Mirando	$0.75
Salt Flat	0.90
Darst Creek	0.90
Pettus, Bee County	1.10

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, Sabine, Cotton Valley, Sarepta and Carterville.

Effective Oct. 30, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

Smackover, all grades	$0.70
Bellevue (Oct. 30)	1.00
*Urania, La. (Oct. 30, 1930)	0.75
†East El Dorado (Calion) (Oct. 30)	0.70

*Posted by Louisiana Oil Refining Corp.
†Posted by Magnolia Petroleum Co.

Oct. 28, 1930, The Texas Co. same schedule in Louisiana as Standard.

Oct. 30, Magnolia met Standard schedule in Louisiana-Arkansas fields except it posts the same low grades in La.-Ark. as in Mid-Continent.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Oct. 30, 1930

Below 29	$0.54	31-31.9	$0.66
29-29.9	0.58	32 and above	0.70
30-30.9	0.62		

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Oct. 28, 1930

Grades A	$1.00	32-32.9	$1.06
Grades B:		33-33.9	1.08
Below 25	0.75	34-34.9	1.10
25-25.9	0.92	35-35.9	1.12
26-26.9	0.94	36-36.9	1.14
27-27.9	0.96	37-37.9	1.16
28-28.9	0.98	38-38.9	1.18
29-29.9	1.00	39-39.9	1.20
30-30.9	1.02	40 and above	1.22
31-31.9	1.04		

On Oct. 28, The Texas Co. posted same prices on Grades A and B Gulf Coast crude as Humble.

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland, Refugio county, and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F. Saybolt.
Sulfur: not over .4%.

Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

New Arkansas Refinery Making Lubricants

CLEVELAND, Dec. 1.—The Macmillan Petroleum Corp. is now producing a line of lubricating oils at its new refinery at El Dorado, Ark. The plant is of 2000 barrels daily capacity operating on heavy Smackover crude.

The new plant utilized a vacuum process in which no direct heat is applied to the lube stocks. Even heaviest fractions are distilled at less than 650 F. Most of the equipment used was designed by H. E. Boner of the Macmillan engineering department.

Six grades of pale lubes are being manufactured. Viscosities range from 100 to 1500 seconds at 100 F. In addition the company makes an antiknock naphtha and a furnace oil. Sales of lubes made by the company will be handled by the Harry P. Dunn Co., 624 So. Michigan Ave., Chicago. This company recently added J. E. Messler, formerly of the Indian Refining Co. and Crown Central Petroleum Corp., to its sales force.

RICHMOND, Va.—Its own district plant in Western North Carolina will be operated by the Sinclair Refining Co. through its purchase recently of the Koon Oil Co., Asheville, N. C., formerly a distributor of Sinclair products. Ten service stations were included. A bulk plant will be erected by Sinclair shortly.

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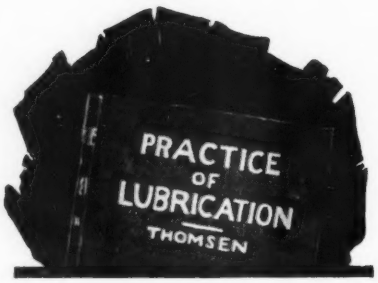

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Crude Oil Prices (in Effect Dec. 1, 1930)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Oct. 27, 1930)

Salt Creek 29-29.9	$0.69
" " 30-30.9	0.73
" " 31-31.9	0.77
" " 32-32.9	0.81
" " 33-33.9	0.85
" " 34-34.9	0.89
‡Salt Creek 35-35.9	$0.92
" " 36-36.9	0.95
" " 37 and above	0.98
Elk Basin	1.25
Grass Creek light	1.25
Big Muddy	1.00
Lance Creek	1.33
Rock Creek	1.01
Mule Creek	1.20
Rex Lake	1.10
Pondera	1.45
‡Osage	0.85
‡Cat Creek, Mont	1.25
Sunburst, Mont	1.55
‡Hogback, N. Mex	1.40
Artesia, N. Mex	0.75

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective Sept. 15, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Domingues	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	‡Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Ventura Avenue (Associated Oil Co.)
14-14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	$0.55	$0.70	$0.70
15-15.9	.70	....	....	.70	.70	.70	.70	....	.55	.55	.55	.55	....	.55	.70	.70
16-16.9	.70	....	....	.70	.70	.70	.70	....	.55	.55	.55	.55	$1.65	.55	.70	.70
17-17.9	.70	....	....	.70	.70	.70	.70	....	.55	.55	.55	.55	for	.55	.70	.70
18-18.9	.76	....	....	.76	.76	.71	.76	....	.55	.62	.62	.62	55°	.65	.75	.76
19-19.9	.82	....	....	.82	.82	.77	.82	....	.55	.70	.70	.70	gravity	.70	.80	.82
20-20.9	.88	....	....	.88	.87	.83	.87	....	....	.78	.78	.78	and	.78	.85	.88
21-21.9	.94	....	....	.94	.93	.90	.93	$0.92	....	.86	.86	.86	over	.90	.90	.91
22-22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	....	.95	.97	.94
23-23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	....	1.02	1.05	1.00
24-24.9	1.12	1.12	....	1.12	....	1.08	1.08	1.05	....	1.06	1.04	1.04	....	1.08	1.07	1.05
25-25.9	1.17	1.17	....	1.17	....	1.11	1.12	1.09	....	1.10	1.06	1.06	....	1.11	1.09	1.10
26-26.9	1.22	1.22	....	1.22	....	1.15	1.16	1.13	....	1.14	1.08	1.08	....	1.15	1.12	1.15
27-27.9	1.26	1.27	....	1.26	....	1.19	1.21	1.18	....	1.18	1.11	1.10	....	....	1.16	1.19
28-28.9	1.30	1.32	....	1.30	....	1.23	1.25	1.23	....	1.23	1.15	....	....	....	1.20	1.23
29-29.9	1.34	1.37	....	†1.34	....	1.26	1.29	1.28	....	1.29	1.19	....	....	....	1.24	1.27
30-30.9	1.38	1.42	....	†1.38	....	1.29	1.33	1.33	....	1.35	1.23	....	....	....	1.29	1.31
31-31.9	1.43	1.47	....	....	....	....	....	1.38	....	1.41	1.27	....	....	....	1.34	1.36
32-32.9	1.48	1.52	....	....	....	....	....	1.43	....	1.47	1.31	....	....	....	1.40	1.41
33-33.9	....	1.57	....	....	....	....	....	1.48	....	1.53	1.35	....	....	....	1.46	1.47
34-34.9	....	1.62	1.32	....	....	....	....	1.53	....	††1.59	1.39	....	....	....	....	1.53
35-35.9	....	1.66	1.39	....	....	....	....	1.58	....	††1.65	1.43	....	....	....	....	1.59
36-36.9	....	1.72	1.46	....	....	....	....	1.63	....	....	....	....	....	....	....	....
37-37.9	....	1.78	1.53	....	....	....	....	1.68	....	....	....	....	....	....	....	....
38-38.9	....	1.84	1.60	....	....	....	....	1.73	....	....	....	....	....	....	....	....
39-39.9	....	1.90	1.66	....	....	....	....	1.78	....	....	....	....	....	....	....	....
40-40.9	....	1.96	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....
41-41.9	....	2.02	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....
42-42.9	....	2.08	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased.
‡Union Oil Co.'s prices on Kettleman Hills crude are, effective Sept. 15: 35-39.5, $1.10; 40-44.9, $1.20; 45-49.9, $1.35; 50-54.9, $1.50; and 55 and above $1.65.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Dec. 1	Nov. 24
Soda Ash light 58% bags, cwt.	$1.32–1.55	$1.32–1.55
Silicate of Soda 60 deg. drums, cwt.	$1.75–1.90	$1.75–1.90
Silicate of Soda 40 deg. tank cars, cwt.	$0.80	$0.80
Silicate of Soda 40 deg. drums cwt.	$1.05	$1.05
Sal Soda wks.	$0.90-1.10	$0.90-1.10
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	11.00-12.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks., lb.	2.40-2.45	2.40-2.45

Compounders' Supplies

	Dec. 1	Nov. 24
Vegetable Oils		
Linseed carloads, spot, lb.	9.60	9.40
Tanks, spot	9.00	8.80
Soya Bean, Tank, coast, lb.	7.50	8.00–9.00
Oleic Acid		
Distilled, tanks, lb.	7.75	5.75
Distilled, bbls., lb.	8.625	8.625
Saponified, tanks, lb.	7.75	7.75
Saponified, bbls., lb.	8.625	8.625
Lard Oils		
Prime Winter Strained, lb.	14.00	14.00
Extra Winter Strained, lb.	10.25	10.25
Extra, lb.	9.75	9.75
Extra No. 1, lb.	9.25	9.25
No. 1, lb.	9.00	9.00
No. 2, lb.	8.75	8.75
Tallow oil, lb.	9.00	9.00
Neatsfoot Oil		
Pure, bbls., lb.	13.75	13.75
Extra, bbls., lb.	9.50	9.50
No. 1 bbls., lb.	9.25	9.25
Cold Pressed, lb.	16.25	16.25
Fish Oils		
Menhaden Oil		
Light Pressed, gal.	41–43	41–43
Light Pressed, tank cars, N. Y., gal.	35–37	35–37
Yellow bleached, gal.	38–41	38–41
Whale, extra winter bleached, gal.	80	80
Naval Stores		
Steam, distilled turpentine, N. Y., gal.	43.50-44.50	43.75-44.75
Steam distilled turpentine, Savannah, gal.	38	38.75
Gum turpentine, N. Y., gal.	43.50	45
Gum turpentine, f.o.b. cars Savannah, gal.	38 50	38.75
Wood Rosin, N. Y., bbl.	$5.15	$5.15
Wood Rosin F, Savn'h, bbl.	$4.76	$4.66
Gum Rosin B, N. Y. bbl.	$5.10	$5.10
Gum Rosin B, f. o. b. cars Savannah, bbl.	$4.20	$4.20
Rosin oil, pure, gal.	56	56
Rosin oil, compounded, gal.	50	50
Pine Tar		
Kiln burnt, bbl.	$13.00-14.00	$13.00-14.00
Retort, bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal.	46–48	46–48

10,000,000 Barrels Special Refined Oils in 1929

WASHINGTON

PRODUCTION of miscellaneous oil products, other than gasoline, kerosine, gas oil, fuel oil, lubricants, wax, coke and asphalt, totaled 9,924,000 barrels in 1929, compared with 9,402,000 barrels in 1928, according to the U. S. Bureau of Mines.

These products are reported by the bureau in its monthly report of oil industry operations under "other finished products." Chief among them was road oil, of which 3,281,000 barrels were produced in 1929, and 2,972,000 barrels in 1928. These figures do not include 1,000,000 barrels or more of intermediate products between road oil and light asphalt fluxes which the bureau reports in its refinery statistics under asphalt.

Other of the more important "other finished products" include refinery gas, absorption oils, petrolatum, special naphthas, medicinal oils, insecticides, pitches, and specialties such as special waxes, lubricants including household oil, greases and transmission oils, candy maker's oil, wax tailings, and acid oil recovered from acid sludge and sometimes used as a fuel.

The uses to which these miscellaneous oil products are put are many. Refinery gas is used partly in industrial plants and partly in the enrichment of manufactured gas, but the larger portion is used for fuel under boilers and stills.

Absorption oils are used mainly by the natural gasoline industry as a part of the absorption process.

Petrolatum, a product of paraffin-base crude, is the base of vaseline, salves and ointments.

Special naphthas include painter's and cleaner's naphthas. The painter's naphtha is variously called mineral spirits, turpentine substitute and resin solvent. Cleaner's naphtha is often called Stoddard solvent.

Medicinal oils are used both internally and externally. They are separated into two main classes, the heavy product allied to petrolatum, such as salves, creams and ointments and the lighter product for internal and external use.

Insecticides are used for destroying insects and other pests. It is generally in a liquid form for spraying.

Pitches, cable coatings and sealing compounds are used as protective coatings. Special waxes include such products as floor wax.

The accompanying table shows production figures of miscellaneous refined oil products in 1929 compared with 1928.

Production of Miscellaneous Refined Products, by Refining Districts, in 1929 and 1928

(Figures in Thousands of Barrels, of 42 Gallons)

1929	Road oils	Refinery gas	Absorption oils	Petrolatum	Furnace oils	Special naphthas	Medicinal oils	Miscellaneous	Total
East coast	571	66	.....	23	.....	.....	18	785	1,463
Appalachian	10	.....	4	158	3	2	.....	82	259
Indiana, Illinois, Kentucky, etc.	1,041	108	.....	51	.....	.....	20	935	2,155
Oklahoma, Kansas, and Missouri	265	57	75	6	158	99	.....	49	709
Texas	21	26	73	8	7	.....	.....	22	157
Louisiana and Arkansas	56	1,431	.....	.....	13	14	.....	1,011	2,525
Rocky Mountain	76	44	.....	5	34	5	.....	100	264
California	1,241	152	177	.....	.....	84	26	712	2,392
Total	3,281	1,884	329	251	215	204	64	3,696	9,924
Texas Gulf coast	21	.....	.....	8	.....	.....	.....	14	43
Louisiana Gulf coast	52	1,431	.....	.....	13	9	.....	943	2,448
1928									
East coast	560	.....	.....	30	.....	.....	27	699	1,316
Appalachian	19	.....	.....	222	9	.....	.....	180	430
Indiana, Illinois, Kentucky, etc.	811	71	.....	49	141	4	32	1,089	2,197
Oklahoma, Kansas, and Missouri	297	.....	81	3	123	53	.....	18	575
Texas	3	.....	36	8	.....	3	.....	13	63
Louisiana and Arkansas	20	1,125	.....	.....	13	.....	.....	1,065	2,223
Rocky Mountain	41	.....	.....	.....	26	5	.....	88	160
California	1,221	157	152	.....	.....	52	28	828	2,438
Total	2,972	1,353	269	312	312	117	87	3,980	9,402
Texas Gulf coast	.....	.....	.....	7	.....	1	.....	13	21
Louisiana Gulf coast	20	1,125	.....	.....	13	.....	.....	919	2,077

NEW EQUIPMENT

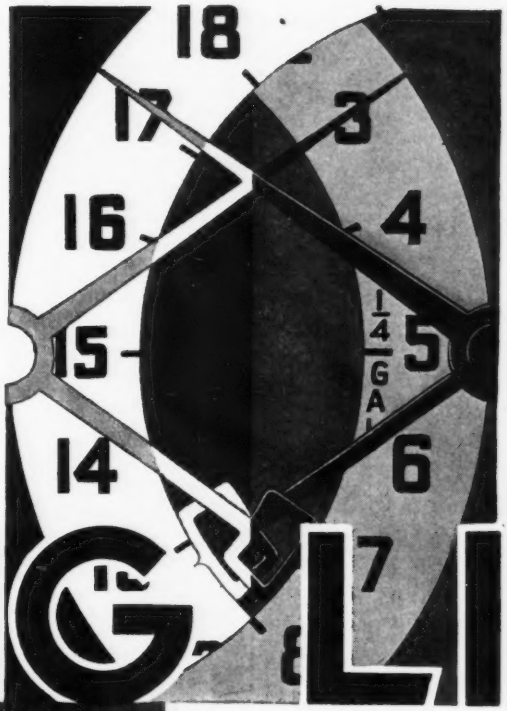
Worthington Pump & Machinery Corp., 2 Park Ave., New York, N. Y., acquired the Gilman Mfg. Co., East Boston, Mass., recently. Among other equipment for all branches of the oil industry, the Worthington company is making what it calls a super-accurate, super-speed, meter-and-clock unit for gasoline pumps, which will operate at any speed up to 18 or 20 gallons per minute.

* * *

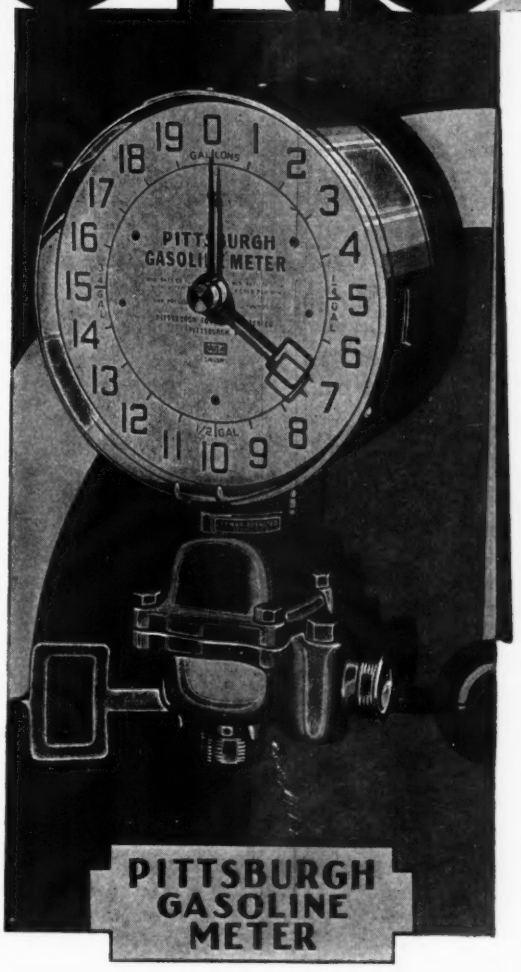
American-LaFrance & Foamite Corp., Elmira, N. Y., has developed a new foam producing device called the Foamite duomixer, to be used in a system known as the Foamite dual powder system.

Designed primarily for stationary use, the duomixer is a two-hopper device. Because the two parts of the powder are poured into separate hoppers, foam is not produced at the duomixer. The resulting solutions flow through twin pipelines, terminating in mixing chambers or nozzle sets. With this set-up, the duomixer may be located as far as 1500 feet from the risk to be protected.

Pittsburgh Gasoline Meters are positive displacement, nutating piston meters and are built for



LONG LIFE



They are designed to give years of service, are never out of style and seldom out of order. Only the finest raw materials, tested in our physical and chemical laboratories, are used. That's one big reason for their long life. Before you buy, be sure you thoroughly investigate Pittsburgh Gasoline Meters. There is a difference; you will see it.

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Tulsa, Okla.
Dallas, Texas
Columbia, S. C.
Salt Lake City
Seattle, Wash.
Houston, Texas
Los Angeles, Calif.
Kansas City, Mo.

Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ending Nov. 29 Sales	First	High	Low	Last	Change
42⅜	17½	42¼	20½	922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 30	2,700	22	22	21⅛	21¾	— ¼
64¾	12½	37	8	209,180	N.P.	American Republics Corp.	....	.....	2,900	11	11	†8	8⅝	— 3⅛
47¼	34½	51	30⅞	2,240,000	$25	Associated Oil	50cQ	Sept. 30, 30	.....	....	....	....	....	.....
77¼	30	51⅝	18⅝	2,683,868	25	Atlantic Refining Co.	‡25cQ	Sept. 15, 30	12,400	21⅞	22¼	21	21½	— ⅜
49⅛	20	34	12⅝	2,257,108	25	Barnsdall Corp. A	50cQ	Nov. 6, 30	10,300	14⅞	15	14⅜	14½	— ¼
34½	25	35	21	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	100	....	22	†21	21	— 1
32⅞	12½	20⅝	9¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	3,200	10	10	9½	10	0
37¾	18	30½	10	4,610,258	N.P.	Continental Oil (Delaware)	....	.....	27,500	12½	12⅝	11⅝	11¾	— 1¼
94¾	42¼	71¾	28½	410,857	$100	General Asphalt Co.	$1Q	Sept. 15, 30	2,700	30¾	31	29½	30	— ⅞
109	26	116⅛	33½	250,000	100	Houston Oil	....	.....	8,100	43⅛	44½	40	41	— 2½
..	..	10¼	7⅝	.....	....	Houston Oil, new	....	.....	8,100	10	10⅜	9⅛	9½	— ½
39⅜	17⅜	32	11⅜	1,379,295	N.P.	Independent Oil & Gas	37½c	Oct. 2, 30	1,300	14¾	14⅞	14⅛	14⅛	— ⅜
53	13⅛	28⅜	3¼	699,066	10	Indian Refining	....	Dec. 15, 20	19,400	4⅜	4½	4¼	4¼	— ¼
51¼	11½	27¾	8⅛	568,816	10	do certificates	....	.....	.....	....	....	....	....	.....
38⅜	16½	29½	21¼	3,994,150	N.P.	Lago Oil & Transport	....	Aug. 2, 27	.....	....	....	....	....	.....
18	7	12	4¾	1,187,701	N.P.	Louisiana Oil Refining	.....	.....	1,200	5¼	5¼	5⅛	5⅛	— ⅛
100¼	80	89½	78¾	40,000	$100	do pfd.	$1.62½Q	Nov. 15, 30	.....	....	....	....	....	.....
18½	5⅞	10⅜	2	330,000	N.P.	Maracaibo Oil Exploration	....	.....	1,000	2¾	3	2¾	2¾	+ ⅛
295	176	182	150	459,428	$100	Mexican Petroleum	$3Q	Oct. 20, 30	.....	....	....	....	....	.....
105	102	..	..	120,000	100	do pfd.	$2Q	Oct. 20, 30	.....	....	....	....	....	.....
69⅜	9¼	37	9¾	1,244,383	N.P.	Mexican Seaboard Oil	....	Oct. 15, 24	13,100	13½	14¼	12¼	13	— ⅝
39⅞	22½	33	15½	1,899,138	N.P.	Mid-Continent Petroleum	50cQ	Nov. 15, 30	2,600	17⅛	17⅝	16⅝	16⅞	— ¼
3⅜	¾	2½	¾	908,171	N.P.	Middle States Oil ctfs.	.....	.....	.....	....	....	....	....	.....
..	..	32	16⅜	6,708,086	N.P.	Ohio Oil Co.	50cQ	Sept. 15, 30	22,600	19	19¼	18¼	18¾	— ½
69	40¼	64¼	42	1,000,000	$50	Pan American Petrol. & Trans.	....	Oct. 20, 27	200	43	43	43	43	0
69¼	40½	67½	41	2,422,221	50	do B	....	Oct. 20, 27	1,100	42⅞	43½	42⅞	43	— ½
15¼	3	12¾	2⅛	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	500	2⅝	2⅝	2⅝	2⅝	— ¼
76	47½	80	47½	25,666	$100	do pfd.	....	July 2, 23	.....	....	....	....	....	.....
..	..	27½	10	2,937,900	N.P.	Petroleum Corp. of America	37½cQ	Sept. 30, 30	15,700	10⅝	11	10	10	— ⅞
47	24¼	44¾	16⅛	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	Oct. 2, 30	29,500	19⅜	19⅜	17½	18	— 1⅞
3½	1	2½	¾	1,184,917	$25	Pierce Oil Corp.	....	.....	800	¾	¾	⅝	⅝	0
51½	20	52	9¾	150,000	100	do pfd.	....	Feb. 1, 22	400	12¾	12¾	12	12	— 1⅜
5⅞	⅛	7⅛	2¼	2,500,000	N.P.	Pierce Petroleum Corp.	10c	Nov. 15, 30	2,000	2⅞	2⅞	2½	2⅝	— ¼
65⅝	40½	54	18½	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	Sept. 30, 30	7,100	19	19½	17⅞	18	— ⅞
65	45	60	24⅜	4,050,000	25	Prairie Pipe Line Co.	‡75cQ	Sept. 30, 30	11,500	31	31	27½	28½	— 1¾
25⅞	4	31	3	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 30	1,200	3⅞	4	3½	3½	— ½
46¾	25⅛	38	15	56,907	50	do pfd.	....	May 4, 25	390	16⅜	16½	†15	15⅛	— 1⅜
30⅜	20	27½	10⅜	3,038,370	25	Pure Oil Co.	37½cQ	Sept. 1, 30	5,900	11⅛	11⅜	10¾	11	— ¼
116	108	114¼	93½	130,000	100	do 8% pfd.	$2Q	Oct. 1, 30	450	102	102	100	100½	+ ⅜
49¾	22⅜	28¼	5⅛	2,891,735	25	Richfield Oil (California)	50cQ	Sept. 1, 30	6,300	6⅝	6⅝	6¼	6⅜	0
42½	15	25¾	7	1,235,270	N.P.	Rio Grande Oil Co.	50cQ	July 25, 30	3,800	8⅜	8⅜	8	8	— ¾
64	43⅜	56½	37⅝	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.875	Aug. 13, 30	18,800	37⅝	41⅜	†37⅝	39⅜	+ ⅝
55⅜	43⅜	48⅜	33¼	77,492	L2	Shell Trans. & Trading	$1.453	July 28, 30	40	33¼	33¼	†33¼	33¼	— 2⅜
31⅜	19	25½	7½	13,069,076	N.P.	Shell Union Oil Corp	35cQ	June 30, 30	15,200	8¼	9	8⅛	8¼	— ¼
..	..	106¼	65½	400,000	100	do pfd.	$1.37½Q	Oct. 1, 30	3,200	67	69	†65½	68	— 1½
40⅛	15	37	7	869,255	10	Simms Petroleum Co.	40cQ	June 14, 30	1,800	8¼	8⅞	8¼	8½	+ ⅜
45	21	32	11⅜	5,455,665	N.P.	Sinclair Consolidated Oil Corp.	50cQ	Oct. 15, 30	30,750	13¼	13⅜	12⅜	12¾	— ⅜
111	103	112¼	103	154,685	100	do pfd.	$2Q	Nov. 15, 30	100	103	103	†103	103	— 1
46½	42	42	10¼	1,097,650	$25	Skelly Oil Co.	50cQ	Sept. 15, 30	2,100	14½	14½	13½	13½	— ⅝
..	..	99¾	60½	120,000	100	do pfd.	$1.50Q	Nov. 1, 30	600	61½	62	61⅛	61⅛	— 3⅞
..	..	106	98	750,000	100	S. O. Export Corp. pfd.	$2.50S.A.	June 30, 30	500	103¼	103¼	103	103	— ½
81⅛	51½	75	48⅝	13,016,434	N.P.	S. O. California	62½cQ	Sept. 15, 30	22,500	50¼	50⅝	†48⅝	49	— 1½
..	..	49	17⅛	320,000	$25	S. O. Kansas	50cQ	Sept. 15, 30	3,600	19	19	18	18⅛	— 1⅞
83	48	84⅛	49	25,443,643	25	S. O. New Jersey	‡25cQ	Sept. 15, 30	53,625	54¼	54⅝	51¾	52¾	— 2
48⅛	31⅝	40⅝	24¾	17,809,530	25	S. O. New York	40cQ	Sept. 15, 30	30,800	25⅛	25⅜	†24¾	25	— ⅜
86⅜	55	70	47⅜	1,416,911	N.P.	Sun Oil Co.	25cQ	Sept. 15, 30	1,900	54½	55	†47⅜	48½	+ ⅛
105½	100	107¾	102½	100,000	$100	do pfd.	$1.50Q	Sept. 1, 30	320	104⅞	104⅞	103½	104⅛	— ⅞
24	5¼	9½	1¾	1,026,979	N.P.	Superior Oil Corp.	....	.....	4,200	1½	1½	1¼	1¼	0
71⅞	50	60½	35	9,850,724	$25	The Texas Corp.	75cQ	Oct. 1, 30	18,600	38⅛	38⅜	37½	38¼	— ⅛
23⅛	9⅛	14½	5⅛	929,947	10	Texas Pacific Coal & Oil	a2½%	Dec. 31, 29	300	6⅝	6⅝	6½	6½	— ⅜
23½	10	17⅜	7½	5,881,980	N.P.	Tide Water Associated Oil	30cS.A.	Aug. 15, 30	17,900	8½	8¾	†7½	7½	— 1¼
90⅛	74⅜	89¾	69¾	732,550	$100	do pfd.	$1.50Q	Oct. 1, 30	1,900	72½	72½	70½	71	— 1½
40	14	31	15⅛	2,191,820	N.P.	Tide Water Oil Co.	20cQ	Sept. 30, 30	.....	....	....	....	....	.....
97½	85¼	94¼	82	199,443	$100	do pfd.	$1.25Q	Aug. 15, 30	300	83⅞	83¼	82	82	0
..	..	24	12⅜	3,339,150	N.P.	Transcontinental Oil	30c	May 1, 30	.....	....	....	....	....	.....
57	42⅜	50	25¼	2,201,008	$25	Union Oil Co. (California)	‡50cQ	Aug. 9, 30	6,800	26¾	26¾	†25¼	25⅞	— 1⅛
..	..	38⅛	24	1,254,048	N.P.	Union Tank Car Co.	40cQ	Dec. 1, 30	.....	....	....	....	....	.....
42⅛	15	27	6	777,603	N.P.	Warner Quinlan Co.	25cQ	July 3, 30	2,300	6	6	†6	6	0
38	25	29½	26	490,000	N.P.	White Eagle Oil & Refg.	50cQ	Apr. 20, 30	.....	....	....	....	....	.....
29¾	12⅛	21	9	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	600	10¾	10¾	10	10	— ¾

*New high †New low ‡Also extra s-Stock

Total sales 464,775

Oil Dividends

	Amount	Payable	Stock of Record
Associated Oil q.	50c	Dec. 31	Dec. 15
Chesebrough Mfg. q.	$1	Dec. 30	Dec. 10
do extra	$1	Dec. 30	Dec. 10
Honolulu Cons. Oil q.	50c	Dec. 15	Dec. 5
Humble Oil q.	50c	Jan. 1	Dec. 2
do extra	50c	Jan. 1	Dec. 2
Penn Mex. Fuel	$1	Dec. 15	Dec. 6
Sinclair Cons. q.	25c	Jan. 15	Dec. 15
South Penn Oil q.	50c	Dec. 31	Dec. 15
Texon Oil q.	25c	Dec. 31	Dec. 10
do extra	$1	Dec. 31	Dec. 10
Tide Water Associated pfd. q.	$1.50	Jan. 2	Dec. 12
Tide Water Oil q.	20c	Dec. 31	Dec. 12

Gas Pipeline in Canada

TORONTO—Immediate construction will be undertaken by the United Gas & Fuel Co., of Hamilton, of a natural gas pipeline costing $1,500,000, connecting Hamilton with producing wells in Haldemand, Norfolk and Wentworth counties. Here interests associated with the company have acquired a large acreage of gas producing lands.

Vacuum Buys Interest In Michigan Company

CLEVELAND, Dec. 1.—Vacuum Oil Co. has obtained an interest in the Moreland Oil Corp. of Adrian, Mich., pioneer oil jobbing company. As has been the case in many other acquisitions by the Vacuum in the past year or so, the Moreland company will continue in business without change of name, management or personnel.

The Moreland company was established as a partnership at Adrian in 1881 by Robert S. and J. H. Moreland and E. W. Crane. In May, 1929, the Southern Michigan Oil Co. and the Gasoline Service Corp. were merged with the Moreland interests giving the company 10 wholesale and some 200 service stations in Michigan, Indiana and Ohio.

Present officers of the Moreland company are: Robert T. Moreland, president and general manager; Karl B. Hoch, vice president and treasurer; Fred L. Moreland, secretary; and W. B. Alexander, assistant secretary.

Pittsburgh Stock Exchange

Transactions Week Ended Nov. 28, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas.	30	6¼	6¼	6¼	— ¾
do pfd.	317	7¾	7½	7½	— ⅛
Lone Star Gas.	4,672	25¾	23⅝	24	—1⅞
do pfd.	160	106	105	106	+1
Plymouth Oil.	20	19¼	19¼	19¼	+ ¼
Phoenix Oil.	1,800	.25	.20	.20	0
Shamrock O. & G.	1,772	11	10	11	— ¼
Wiser Oil.	230	12½	†12½	12½	—1½

†New low record.

TULSA—A. M. Cullum, resigned his position as oil country sales manager of the Reading Iron Co., with headquarters at Tulsa, on Dec. 1. He has been associated with Reading for the past ten years, starting as a clerk at the Roe puddling plant. He will take up a position with the Harbison & Walker Refractories Co., Pittsburgh.

N. P. N. Service Record

Some of the requests for information, data and advice, which were taken care of in various National Petroleum News offices in the past week are:

Kentucky oil distributor told what major oil companies expect to handle tires, batteries, etc., and referred to forthcoming N.P.N. articles on this subject.

* * *

Minnesota oil marketer sent pages from N.P.N. Oct. 8 issue containing charts for alcohol, glycerine and ethylene glycol.

* * *

Ohio advertising agent furnished gasoline gallonage figures for Ohio in 1929 and 1930, by months.

* * *

Delaware chemical manufacturer given name and address of manufacturer of motor oil he inquired about.

* * *

Wyoming engineer furnished explanation of tank wagon and service station prices of gasoline in city he inquired about, discounts, taxes, how taxes are paid and for what purposes used.

* * *

Massachusetts oil jobber told in two-page letter how to make temperature corrections on gasoline and naphtha, how much temperature would affect gasoline in his climate, and what practice of oil companies is in making allowances, and how temperature variation might show up in a month-to-month inventory.

* * *

Representative of Ford Motor Co. told of Houston operations of three large oil refiners he inquired about.

* * *

Mid-Continent refiner given explanation of gross production tax on crude in Texas.

* * *

Ohio oil jobber advised about oil promoter at Fort Worth.

* * *

President of a Texas oil company and head of a Texas association called at Houston office to discuss oil conditions generally; and was furnished data on A.P.I. program at Chicago.

* * *

Large producer refiner marketer furnished list of West Texas refiners.

* * *

Texas crude price changes furnished to various Texas oil executives by Houston office.

* * *

Ohio bank furnished details of marketing scheme of new oil company in Ohio.

* * *

New York oil distributor told of present status of oil companies he inquired about.

* * *

Indiana oil jobber told how he may obtain specifications of various motor oils.

* * *

Ontario oil jobber told present status of proposed new rates on petroleum products in the Mid-Continent.

* * *

Purchasing department of large Ohio city, which will buy its gasoline requirements for various automotive equipment shortly, furnished suggestions and recommendations on gasoline specifications which city submitted to N.P.N. for looking over and for our O.K.

* * *

Nebraska oil jobber told how outages are figured for tank cars of various capacities.

* * *

Washington oil company member told of status of southeastern oil company whose scrip he holds.

* * *

Engineering school of Pennsylvania college referred to N.P.N. articles on reclamation of used lubricating oils; and furnished names and addresses of manufacturers of apparatus for doing this work.

* * *

New York oil broker given oil connections of technologist of eastern oil company after publication in N.P.N. of one of his articles.

* * *

Texas refinery employe furnished references to some 100 articles published in the past year in N.P.N. on cracking and hydrogenation.

* * *

Large Kansas refiner and producer referred to source for specifications and tests on cleaners' naphtha and solvents made from petroleum.

* * *

Pennsylvania chemical company furnished latest S. A. E. specifications for motor oils, published in May 28, 1930 issue of N.P.N., page 31.

* * *

Canadian oil man furnished references to all liquefied petroleum gas articles published in N.P.N.

* * *

Tank car corporation furnished figures on refined oil cosumption for past five years.

* * *

Motor truck manufacturer called at Chicago office to discuss market for trucks in oil industry.

* * *

Oil well cementing company furnished eight N.P.N. copies in which articles on cementing wells had been published.

* * *

Pennsylvania inquirer told where he may buy oil testing instruments and oil sample bottles.

* * *

Illinois lumber company given names and addresses of eight designers and manufacturers of service stations.

* * *

Missouri steel company told about present standards and methods of measuring density of greases: and referred to engineers who have been investigating the determination of grease and heavy oil consistency recently.

* * *

Indiana coke company member given explanation of "benzol equivalent" as used in N.P.N. articles and by the oil industry, what it designates in a motor fuel, and how benzol content is tested in a straight-run gasoline.

* * *

Maryland oil broker and exporter furnished names and addresses of five suppliers of Panuco crude in tanker lots; also furnished name of supplier of the grade of gas oil he seeks.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

SUPERINTENDENT-COLLEGE GRADUATE, 12 years experience operating modern refineries on all types crudes. Have personally operated all types modern equipment. Considerable experience with vapor phase cracking and development of special processes. Address Box 613.

SALES EXECUTIVE with many years experience in the oil industry both wholesale and retail; good general knowledge of the marketing end as well as a wide experience in location work is desirous to make a connection with a responsible organization. A-1 reference together with business history can be furnished. Address Box 617, care National Petroleum News.

Situations Open

REFINER AND MARKETER of one of the leading national brands of Pennsylvania oils has opening in sales organization for an ASSISTANT TO SALES MANAGER. We prefer one who has had experience in the successful merchandising of branded Pennsylvania oil and who is capable of taking complete charge of sales development details. State your qualifications fully in first letter. An appointment for personal interview will be arranged. Your reply will be treated confidential. Address Box 618.

Business Opportunities

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Send full detail

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William J. Millard

HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS
Grant Building PITTSBURGH, PA.

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Week Ended Nov. 29 Sales	First	High	Low	Last	Change
18¾	13½	18½	12¼	.....	£1	Anglo-Amer. Oil voting stk. ctfs..	36c	June 5, 29	.....	.....	.....	.....	.....	.....
17½	11	19	12	.....	£1	do non-voting stk. ctfs.....	36c	June 5, 29	.....	.....	.....	.....	.....	.....
2½	¾	1	⅜	500,000	N.P.	Atlantic Lobos Oil.....	....	.....	.....	.....	.....	.....	.....	.....
4¾	1	1½	⅝	200,000	$50	do pfd.....	....	.....	.....	.....	.....	.....	.....	.....
46½	25	25	11¼	40,000	25	Borne Scrymser Co.....	....	.....	.....	.....	.....	.....	.....	.....
74¼	55	69	43	200,000	50	Buckeye Pipe Line Co.....	$1S.A.	Oct. 15, 30	940	⅞	⅞	⅞	⅞	+ ⅛
210	130	184⅞	100¼	120,000	25	Chesebrough Mfg. Co.....	$1Q	Sept. 15, 30	200	13	13	12	12	— 1
118¾	5⅝	7⅝	3⅝	.....	N.P.	Creole Petroleum Co.....	‡1Q	Sept. 30, 30	1,000	44	44	†43	43½	— ⅛
75⅜	40	65¾	22	30,000	$50	Cumberland Pipe Line Co.....	....	.....	300	117¾	125	117¾	125	+11½
70½	42	54¾	30	50,000	100	Eureka Pipe Line Co.....	$1Q	June 16, 30	8,700	3⅝	3⅞	3½	3⅝	+ ⅛
...	...	6¾	2½	280,000	N.P	Galena Oil Corp. w.i.....	$1Q	Nov. 1, 30	50	22	22	†22	22	— 1⅛
...	...	37¼	26	.....	N.P.	General Petroleum Corp. w.i.....	....	.....	.....	.....	.....	.....	.....	.....
128	74⅛	119	68⅜	2,974,645	$25	Humble Oil & Refg. Co.....	‡50cQ	Oct. 1, 30	.....	.....	.....	.....	.....	.....
41	22	30	15⅛	26,490,741	N.P.	Imperial Oil, Ltd.....	12½cQ	Dec. 1, 30	8,600	70¾	71	†68⅜	68½	— 2⅜
42¼	26	41	19⅞	300,000	$10	Indiana Pipe Line Co.....	50cQ	Nov. 15, 30	8,400	17⅛	18½	17⅛	18⅛	+ ¾
29⅛	15	24	13⅜	14,247,880	N.P.	International Petroleum Co.....	25c	June 16, 30	1,800	23	23	†19⅞	19⅞	— 3
25⅞	10½	22⅜	13	509,000	$12½	National Transit Co.....	25cQ	June 16, 30	3,700	15	15⅛	14⅝	14⅜	— ¼
17¾	10	21	10⅛	100,000	10	New York Transit Co.....	40cQ	Oct. 15, 30	600	14⅞	14⅞	13⅞	13⅞	— ⅝
63	41	54	26½	40,000	50	Northern Pipe Line Co.....	$2S.A.	July 1, 30	600	14	15⅛	14	15⅛	— ⅜
105½	103¾	108	103	600,000	100	Ohio Oil pfd.....	$1.50Q	June 14, 30	300	26½	30	†26½	30	0
44½	18⅝	32	15¾	400,000	25	Penn Mex. Fuel Co.....	$1	May 20, 30	.....	.....	.....	.....	.....	.....
50	29	33	7½	160,000	25	Solar Refining Co.....	$1.25S.A.	Dec. 20, 29	100	17¼	17¼	17¼	17¼	+ ⅞
23⅜	13	20⅛	8¾	100,000	10	Southern Pipe Line Co.....	$5	Dec. 1, 30	300	8⅜	8⅜	7½	7½	— 1
60¼	35⅛	45⅞	22	1,200,000	25	South Penn Oil Co.....	50cQ	Sept. 30, 30	200	8¾	9	†8¾	9	— ⅝
70	45	64	32½	35,000	50	Southwest Pa. Pipe Lines.....	$1Q	Oct. 1, 30	200	24	24	23	23	— 1
63	45	59⅞	35½	16,850,587	25	S. O. Indiana.....	62½cQ	June 16, 30	50	33½	33½	33½	33½	+ 1
46⅞	29	40½	20¼	2,577,124	10	S. O. Kentucky.....	40cQ	June 30, 30	25,400	36¾	36⅞	36⅜	36⅞	— ¼
50¼	40	48⅞	35¼	188,159	25	S. O. Nebraska.....	‡62½cQ	June 20, 30	65,400	24	24	22⅝	23½	— ½
129	60	108½	50⅜	560,000	25	S. O. Ohio.....	62½cQ	Oct. 1, 30	100	38	38	38	38	0
...	...	...	...	120,000	100	do 5% pfd.....	....	.....	650	58	58	54⅜	54⅜	— 3⅝
124½	113¼	122	115¼	70,000	100	do 7% pfd.....	$1.75Q	Sept. 2, 30	100	103½	103½	103½	103½	+ ⅛
18	5⅛	10	4	34,158	25	Swan Finch Oil Corp.....	....	Jan. 15, 29	160	115¼	115¼	115¼	115¼	0
133¾	75⅜	97⅜	59⅜	5,139,887	25	Vacuum Oil Co.....	$1Q	June 20, 30	8,600	65⅜	65⅝	63⅛	63½	— ⅞

•New high †New low ‡Also extra

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Week Ended Nov. 29 Sales	First	High	Low	Last	Change
.72	⅛	⅜	⅛	$1	Amer. Contr. Oilfields	.....	.....	.....	.....	.....	.....
8⅝	1⅛	4½	⅞	5	Amer. Maracaibo.....	2,200	⅞	⅞	⅞	⅞	0
4¾	1	1¾	1⅛	10	Argo Oil.....	.....	.....	.....	.....	.....	.....
26	3⅜	16¾	5⅛	N.P.	Arkansas Nat. Gas...	2,100	6¾	7	6½	6½	— ⅜
24⅜	6½	16⅝	4⅝	N.P.	do Class A.....	10,400	6⅞	7	6¼	6¾	— ¼
9	4	8⅛	7½	10	do pfd.....	2,000	7⅝	7⅝	7⅝	7⅝	— ⅛
70	50	28½	15¼	N.P.	British American Oil..	.....	.....	.....	.....	.....	.....
4⅞	⅛	2⅝	¾	¼	Carib Syndicate.....	200	1⅛	1¼	1⅛	1¼	0
68½	20	44¼	16	N.P.	Cities Service.....	74,700	20⅛	20½	18¾	19¼	— 1⅛
99¼	84	93⅞	52	100	do pfd.....	1,300	89⅞	89⅞	89⅜	89⅝	— ¼
9¼	8	9	7½	10	do pref. B.....	.....	.....	.....	.....	.....	.....
96	81	89⅞	80	100	do pref. BB.....	.....	.....	.....	.....	.....	.....
1½	⅛	⅛	⅛	1	Colombia Syndicate..	900	3/16	3/16	3/16	3/16	— ...
15	3¼	8¼	2¼	N.P.	Colon Oil Corp.....	800	2¼	2¼	2¼	2¼	0
...	...	21	5¼	N.P.	Columbia Oil & Gas..	2,000	7	7	6⅛	6⅞	— ⅛
11¾	2½	5⅞	2	10	Consolidated Royalty	.....	.....	.....	.....	.....	.....
135	42	74¾	1⅜	N.P.	Cosden Oil Co.....	400	2¾	2¾	2½	2½	— ⅜
87	55	70	15½	100	do pfd.....	.....	.....	.....	.....	.....	.....
2½	¼	1	¼	N.P.	Crown Central Pet...	6,600	1	1	½	⅝	— ¼
11¾	4	...	...	N.P.	Crystal Oil.....	.....	.....	.....	.....	.....	.....
51⅜	51¼	...	...	100	do pfd.....	.....	.....	.....	.....	.....	.....
26	6½	13½	4¾	N.P.	Darby Petroleum.....	100	6	6	6	6	— ⅛
...	...	21¾	21½	N.P.	do new.....	.....	.....	.....	.....	.....	.....
11	2	11	4⅛	N.P.	Derby Oil & Refg.....	400	4½	4½	4½	4½	— ⅛
44	17	60	30	N.P.	do pfd.....	.....	.....	.....	.....	.....	.....
209	115	166⅞	74¼	$25	Devonian Oil.....	.....	.....	.....	.....	.....	.....
7½	1⅜	4	2¼	N.P.	Gulf Oil Corp.....	2,680	79	79⅞	†74¼	75½	— 3⅝
...	...	47½	17¼	N.P.	Homaokla Oil.....	.....	.....	.....	.....	.....	.....
...	...	53½	17	N.P.	Indian Territory A...	700	20⅛	20⅛	19⅞	19⅞	— 3
2⅞	⅝	1¾	⅝	10	do B.....	.....	.....	.....	.....	.....	.....
3½	1¼	3	1½	N.P.	Intercontinental Pet..	2,500	3/8	3/8	3/8	3/8	— ⅛
6¼	1	4¾	¾	N.P.	Kirby Petroleum.....	300	1⅛	1⅛	1⅛	1⅛	0
38⅞	18	29	6¼	N.P.	Leonard Oil & Dev...	8,700	⅞	1	⅞	⅞	— ⅛
67⅜	28	55⅞	20⅜	N.P.	Lion Oil Refg.....	600	9	9	7⅜	8	— ½
...	...	31	5½	$25	Lone Star Gas.....	3,300	25	25⅜	24	24¼	— 1¼
2⅛	¼	½	⅛	1	MacMillan Petrol....	.....	.....	.....	.....	.....	.....
38½	14	16	5	N.P.	Magdalena Synd.....	1,200	⅛	⅛	⅛	⅛	0
6¾	2¼	7½	1¾	N.P.	Margay Oil.....	.....	.....	.....	.....	.....	.....
...	...	11⅜	2¼	N.P.	Mexico Ohio Oil.....	2,100	1⅞	2	†1¾	2	+ ⅛
...	...	6	1	N.P.	Middle States A v.t.c.	1,000	3½	3½	2⅞	2⅞	— ⅛
42	8	36⅛	7½	5	do Class B v.t.c..	2,600	1¼	1⅝	1¼	1⅝	+ ⅜
1⅜	⅛	3½	⅜	1	Missouri-Kansas P.L.	7,500	8¼	8⅜	†7½	7⅝	— ⅞
22⅛	7	12⅛	5⅜	10	Mountain & Gulf Oil..	.....	.....	.....	.....	.....	.....
43⅛	24	41⅜	23⅜	N.P.	Mountain Producers..	3,200	5⅞	6⅛	5⅝	5¾	— ⅛
5	2⅛	3½	1⅛	$5	Nat. Fuel Gas.....	1,600	25⅛	25⅝	23⅝	25½	— ⅜
4⅜	3⅛	3⅜	2⅜	10	New Bradford Oil...	1,000	2	2	†1⅛	1⅛	— ⅛
24½	11¼	16¼	4	25	New England Fuel...	.....	.....	.....	.....	.....	.....
18½	6½	11¼	3	N.P.	N. Y. Pet. Royalty...	200	7	7	7	7	— 1⅛
19¼	8½	11⅝	5	N.P.	North Central Texas	3,400	4⅝	4⅝	4	4	— ¼
18¼	8½	11½	5	N.P.	Oilstocks Ltd. A.....	500	5	5	5	5	0
26⅝	12½	19½	8¼	N.P.	do B.....	.....	.....	.....	.....	.....	.....
3½	⅝	2½	¼	N.P.	Pacific Western Oil...	300	9½	9⅝	9½	9⅝	+ ¼
10½	2¼	4¾	1⅜	N.P.	Pandem Oil.....	2,300	1⅜	1⅜	1⅜	1⅜	— ⅛
25½	13¼	15	13½	$25	Pantepec Oil.....	100	1⅝	1⅝	1⅝	1⅝	— ⅛
28	17	29	19⅛	N.P.	Paragon Refg. B ctfs.	.....	.....	.....	.....	.....	.....
...	...	5½	1		Petroleum Corp.....	.....	.....	.....	.....	.....	.....
37	22	27½	17⅞	N.P.	do warrants.....	.....	.....	.....	.....	.....	.....
16	9	10½	4½	$5	Plymouth Oil.....	700	19⅛	19¾	19⅛	19¼	— ⅜
8⅜	1⅜	5⅜	1⅜	N.P.	Red Bank Oil.....	200	5	5	†4½	4½	— ½
25¼	19	23½	9¾	25	Reiter-Foster Oil.....	1,400	1⅜	1⅜	1½	1½	— ¼
29	13	25	2¼	N.P.	Richfield Oil pfd	100	12⅛	12⅛	12⅛	12⅛	— ⅞
11	3	8⅛	2	N.P.	Root Refining pr. pfd.	.....	.....	.....	.....	.....	.....
5⅞	1⅜	2½	1⅜	10	Ryan Consolidated...	400	2¾	3	2¾	3	+ ⅜
25⅛	9	15¾	5¼	10	Salt Creek Consol....	.....	.....	.....	.....	.....	.....
33⅜	10	8	5⅝	25	Salt Creek Producers.	1,500	7¼	7⅜	6¾	6¾	— ¼
...	...	39⅛	39	25	Shreveport El Dorado	.....	.....	.....	.....	.....	.....
24	9	17	7	N.P.	Signal Oil & Gas A...	.....	.....	.....	.....	.....	.....
12	4	10	3½	5	Southland Royalty...	2,600	8½	8½	8⅛	8⅛	— ⅜
23	7⅛	19⅛	8⅛	N.P.	Sunray Oil.....	1,000	3½	3½	3½	3½	0
81⅛	8½	16	8	10	Texon Oil & Land....	1,300	11½	12⅝	11½	12	+ 1¼
6½	1⅜	4⅛	1¼	5	Venezuela Mexico....	.....	.....	.....	.....	.....	.....
9⅛	2	5	2	1	Venezuela Petroleum.	200	1¼	1¼	1¼	1¼	0
5¾	¼	2⅛	⅛	N.P.	Woodley Petroleum ..	.....	.....	.....	.....	.....	.....
•New High		†New Low			Y Oil & Gas	200	⅜	⅜	⅜	⅜	— ⅛

New York Bonds

Week Ending Nov. 28th

	High	Low	Last	Change
Asso. Oil gold 6s.....	102½	102½	102½	0
Atlantic Refg. deb. 5s...	101⅞	101¾	101⅝	+ ⅛
Cal. Pet. 5s.....	97⅜	97¼	97¼	+ ⅛
Cal. Pet. 5½s.....	101	100½	100	+ ½
General Pet. 5s.....	102⅝	102½	102½	0
Humble Oil & Refg. 5s...	101¾	101	101¾	+ ½
Humble Oil & Refg. 5½s	102¾	102½	102⅝	+ ⅛
Pan Amer. P & T 6s.....	102½	102	102	— ½
Pan Amer. P & T 6s.....	75	75	75	— ¼
Phillips Pet. 5¼s.....	92⅛	90	90	— 4½
Pure Oil 5½s.....	96¾	95	96	— 2¾
Pure Oil 5½s.....	94¾	94	94⅜	— ¾
Richfield Oil of Calif...	73	72	72	— ⅜
Shell Union Oil 5s.....	85	84	84	— 2
Shell Union Oil 5s with war.	86⅞	84¼	84¼	— 1
Sinclair Con. Oil 7s.....	101	100	100½	— 2⅛
Sinclair Con. Oil 6½s...	100	99	99⅜	— ⅛
Sinclair Con. Crude 5½s.	101⅞	101½	101⅜	— ⅞
Sinclair Pipeline 5s.....	100⅛	99¾	100	0
Skelly Oil 5½s.....	87	80	82⅞	— ⅛
S. O. N. J. 5s.....	104½	103⅝	103⅝	— 5
S. O. N. Y. 4½s.....	100	99⅛	99⅝	— ⅜
Transcontinental Oil 6½s war.	110¼	109⅞	110¼	+ ½
Union Oil of Calif. 6s A..	106½	106½	106½	+ ⅜
Union Oil of Calif. 5s C..	101¼	101	101¼	+ ⅜
Union Oil of Calif. 5s war.	97	96⅝	96¼	+ ¼
Warner-Quinlan 6s.....	54	50	54	— ¾
White Eagle Oil 5½s war.	102¾	102½	102½	+4 0

New York Curb Bonds

Week Ending Nov. 28th

	High	Low	Last	Change
Beacon Oil 6s '36.....	98	98	98	+1
Cities Serv. 5s '66.....	80¾	79¾	80¼	— ½
Cities Serv. 5s '50.....	83¼	79¼	80¼	—3¼
Cities Serv. G. 5½s '42..	86⅞	85½	86⅜	—3⅜
Cities Serv. G. P. 6s '43.	92½	86⅜	86⅜	—3⅜
Cities Serv. P. 5½s '52...	84½	83	83⅞	—1
Empire O & R 5½s '42...	85⅜	83⅛	84¼	— ¾
Gulf Oil 5s '37.....	101¼	99⅜	101⅛	— ¼
Gulf Oil 5s '47.....	102½	101¼	102½	+1
Indep. Oil 6s '39.....	101	100⅜	100⅜	— ⅝
Sun Oil 5½s '39.....	102½	101½	102¼	+ ⅝
Valvoline Oil 7s '37.....	100	99½	100	+ ½

Correction

In an article by R. C. Alden and M. Gage Blair on Blending Natural Gasoline to Volatility Specifications which appeared in the Nov. 12 issue of NATIONAL PETROLEUM NEWS an error appeared on Page 113, Column 3.

In example (d) the percentage of natural gasoline is given as 45 throughout. It should have been 47.5 per cent.